

**TONS OF
TIPS
FOR YOUR
MACHINE**

see pages:
16-27, 30,
32-33,
46-47...

Issue 134 • 1st June 1991 • 88p

NEW COMPUTER **EXPRESS**

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

AMIGA THIS PC IS £54...



MEGABOARD
Where to get 1Mb
of RAM for £64!

AMSTRAD



EXPLOSIVE!
Is your PC going to
blow up today?



IS IT WORTH IT?

GAMES



BARGAINS!!!
UBISOFT'S TOP
TITLES SLASHED

COMDEX NEWS



Express visits the world's
biggest computer show

WHAT'S NEW FOR THE MAC?



New kit on the block
Live now on page 11



future
PUBLISHING
Your guarantee of value

FrontendFrontendFrontendFrontend

PHONE-Y DISKS CON THE COPS

2 • New Computer Express • 1 June 1991

COVER FEATURE

REVIEWS

EVERY WEEK

News

All the top stories – pages 4-8

Games Week



Shopping Express	Letters	13	Mac	26
	Amiga	16	Wired World	28
	ST	17	Circuit City	30
	PC	18	Tech Tips	32
	Archimedes	19	Programming	40
	C64	22	Event Horizon	41
	CPC	23	On-line	42
	Spectrum	25	PD Column	46

The 11th annual Comdex Spring attracts record attendance figures

COMDEX 1991: THE

This year's Comdex show took place in Atlanta Georgia between 20 and 23 May.

According to the organisers, Interface, it attracted an estimated 900 exhibitors. These included names such as Microsoft, Citizen, WordPerfect, and Samsung, as well as less well known companies like Darius, Experience Systems, and Egghead Software.

Although the attendance figures have not been correlated yet, Interface are claiming a record number of visitors, beating the previous record of 61,000 set over four days at McCormick Place Chicago in 1989.

The chairman of Interface, and founding father of the Comdex show, Sheldon Adelson was ebullient about the 1991 show: "This industry is making a successful and historic transition. As it has done on previous occasions, the industry is using the Comdex



* The time, the place, the hype attracted some 900 exhibitors from the great to the obscure. New launches abounded, speeches were made, notebook competing took centre stage, and multi-media was still a talking point.

platform, and the critical mass of the audience, to lift itself and the world economy into a new era of productivity".

What he failed to note was the

fact that this year's show is also the birthplace of a fast approaching notebook war which could alter the face of personal computing over the next decade.

NOTEBOOKS: SPECS ARE UP AS PRICES FALL

As data communication speeds up, the world shrinks, and personal computing follows suite. Comdex saw a glut of portable power with notebook, laptop and handheld computer launches announced.

The world's first notebook computer using Intel's latest 80486 chip was on show. However, the 386 is not dead yet, as a number of previews and launches illustrated. Despite this, a number of manufacturers are all ready having to drop the prices of their existing 286 and 386 machines in anticipation of the greater processing power offered by the i486.

THE RISING STARS

The Notebook Computer Co: World's First 486 notebook
The seven-month-old Notebook

Computer Company previewed what it is claiming to be the lightest, cheapest and first 486SX-based laptop. The 486-T20 attracted flocks of interested observers to the Notebook stand. While they were impressed with the specifications and price of \$4,495, general disappointment was felt at the fact that the machine was not yet up and running!

The 20MHz version comes with a software-based maths co-processor emulator, 20Mb hard disk, 1Mb of RAM and a VGA screen. There is a more expensive version, the 33MHz DX costing \$6,795. This packs a 80387 maths co-processor, 40Mb hard disk, VGA display and 1Mb of RAM.

Both machines measure 8.5 x 11 x 1.4 inches, which is about the size of a ream of A4 paper. They weigh 4.5 pounds,

and have MS-DOS 4.1, and laplink built into ROM. Ports are provided with an 0.7 inch thick add-on pad called ePad. This has an analogue colour port, 3.5-inch floppy drive, Disney Sound digital audio speaker system, and a CD-ROM compatible SCSI drive.

The official launch date for the computers is late June, with the ePad to follow in July.

Fujitsu and AST: handhelds

At the same time as these machines were previewed, both Fujitsu and AST were showing off their latest 32-bit personal computers in Japan.

Fujitsu came forward with its FMR50NBX machine. At its heart is the 16MHz 386SX processor. Three types of drive are bundled with the computer: a 3.5-inch 1.44Mb floppy drive, a logical 1.25 RAM drive, and an

integrated circuit card slot.

It has a 16-colour LCD, backlit screen. And the whole thing weighs in at 5.7 pounds. Its price starts at ¥258,000 (approx £1,840).

Fujitsu has not stopped there however, it also announced a 16-bit handheld computer. The Acutote 3000 is a DOS-compatible machine which is said to be the same size as a conventional scientific calculator.

The computer makes use of cards which offer up to 2Mb of memory. The conventional RS232 interface has been replaced by an optical version which Fujitsu claims is more reliable. Price has not yet been announced for this machine.

AST is also introducing a notebook its Premium Executive 386SX120. It runs both DOS 4.1 and Windows 3. The central processor is a 20MHz 386SX chip which supports a 640 x 480 VGA display. It costs approximately £2,325, and AST says that it expects only 4,500 units to be shipped this in 1991.

Altima's attempt

Meanwhile, back at Comdex, Altima was showing off its 6.3 pound, \$2,999 386SX notebook. It comes with the, by now standard 1Mb of RAM, expandable to 5Mb. However, its VGA display makes use of both LCD and cold cathode fluorescent technology (CCT) to provide 32 shades of grey. The next step up the line from Altima is a 60Mb hard drive version due later this year.

THE FALLEN HEROES

With notebooks rapidly taking over as the next stage in PC evolution, some desk, and even laptop makers felt it was time for price cuts.

Zenith at the nadir

Zenith announced that it was cutting the prices of its laptop and desktop machines across the board. This is the second price cut made by the company in 60 days.

The unhappy star of the price massacre is the Z-386/33E model 150 desktop. This falls in price by \$3,000. The Supersport 396SX Model 40 follows this with a \$600 cut. The Z-386/25 model 1, the only computer in Zenith's range not to include DOS 4.1 and Windows 3 on the hard disk falls by \$1,000.

Texas Instruments tune down

TI is also to 'slash' the prices of its computer, specifically the TravelMate series of 286 and 386 notebooks. The TravelMate 3000 with a 20Mb hard disk, which only went on sale in December 1990, drops from \$5,499 to \$3,199. While the 286-based TravelMate 2000 has \$830 sheared from its price to take it from \$3,199 to \$2,369.

Samsung the same song

Samsung was following suit with price cuts on its 16MHz Notemaster series of notebooks and its LAN workstation and file server systems.

The 20Mb hard drive version



Is this the lightest laser ever?

Personal computers are not the only pieces of computing hardware which can be slunk to lap size while retaining power. The machine with the biggest 'Wow' factor at Comdex this year is undoubtedly Citizen's PN48 Notebook 'Near Laser' Printer which weighs a mere 2.5 pounds (including battery), for only \$549.

It's 11.5 x 3.5 x 2 inches, and sits next to your notebook computer. Citizen calls the PN48 the "World's Smallest Laser-Quality Printer." It prints on plain paper, including envelopes and labels, and its software compatible with Citizen GSX, Epson and IBM emulations.

Canon fires at the home and office

Canon has released three 20MHz 80386SX-based PCs aimed at the booming home and office marketplace. The machines, announced at Comdex Spring, are bundled with MS-DOS 4.01, Microsoft Works, Windows and a starter kit for the Prodigy on-line service.

Canon is offering each of the three machines - the C200 M50/HD40, M50/HD80 and M50/HD120 - in four configurations: standard, which includes the computer, keyboard, software and PS/2 mouse; standard with the addition of a VGA monitor; standard with the addition of a Canon bubblejet printer and paper feeder; and maximum, with both a VGA monitor and bubblejet printer.

Pricing on the machines starts at \$1,998 for a standard configuration of the C200 M50/HD40, to \$3,568 for the Maximum configuration of the high-end

C200 M55/HD120.

The C200 M50/HD40 has a 40Mb hard drive with a 28ms access speed, 1Mb of RAM (expandable to 8Mb) and four 16-bit expansion slots. Other features include VGA graphics, twin serial ports and a single parallel port. The C200 M50/HD80 comes with a 17ms 80MB hard drive and 2MB of RAM. Other specifications are as with the M50/HD40.

The C200 M50/HD120 is the flagship of the range and comes with 2Mb of RAM, a 15ms 120MB hard drive and a 2400 bits per second Hayes-compatible modem. The modem occupies one of the machines four available expansion slots.

According to a spokesman for Canon, the M50/HD40 and M50/HD120 will ship in the U.S. from next month onwards. The M50/HD80 ships in August.

and exhibits the latest multi-media, 486 computing, and more . . .

PC's FUTURE UNFOLDS



• Texas Instruments follows a recent trend and slashes the prices of its TravelMate series. Was this because of the world recession or to ready the company for a new batch of 486-based machines?

falls 30 per cent, from \$3,999 to \$2,799. Its 40 meg Notemaster slips by 28 per cent from \$4,299 to 3,095, and the 60Mb machine drops 24 per cent from \$4,499 to \$3,399.

It's not all bad news for Samsung however; it has also revealed plans for its first UNIX-based, 18 inch terminal. Based on AMD's 29000 RISC processor, it is called the SGS-19X Windows System. On top of this is the System master 486/33TE, a 33MHz machine based on the 486 EISA architecture. Entry level price is \$7,699 rising to \$31,000. ■

Playing a new Ensemble

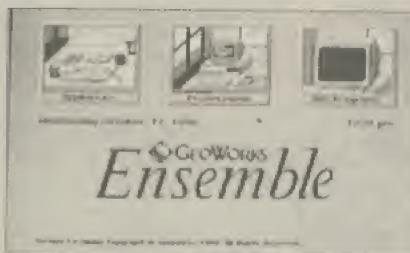
There is another Graphic User Interface for the PC aside from the much talked about Windows 3, and it's called Geoworks Ensemble. The upgrade to this software was announced at Comdex. The new version 1.2 of Ensemble builds on the original version, and includes a number of new features, including support for more than 300 printers and a 100,000 word spelling checker. The package is scheduled to ship at the end of June. Registered users will be entitled to upgrade free of charge. Pricing remains unchanged at \$199-99.

"Version 1.2 addresses the most immediate upgrade features

that our users have requested," said Brian Dougherty, CEO of the company. "We wanted to provide Ensemble 1.2 free to registered users of v1.0 in recognition of their early commitment to the company and the product."

A new licensing deal allows the Philips to bundle Ensemble with all of its PCs. Initially, plans call for Philips to bundle Ensemble 1.2 with its 386, 386SX and new 286 notebook PCs. Geoworks also revealed that its OEM commitments now exceed 600,000 units.

According to Dougherty, European language editions are ready to ship.



• There's more to life on the PC than Windows as Geoworks shows with its latest version of the Ensemble graphics user interface due here soon.



Going for Gold

Goldstar was also present at Comdex. It exhibited two of its more recent PC productions in the form of the laptop GS-620, and the 386SX-based GS333 desktop machine. The latter runs at a sprightly 33MHz.

While these machines are not

expected to be seen in the UK until next year, there is a UK equivalent system to the 333 all ready available here.

This is the GS-335 Tower system which costs £2,888.83. It is available from Silica Shop on 081-309 111.

24-bit image editing for your PC

Another big hit at Comdex was PixaArts new image editing program PixaFoto.

Selling for \$800, the package is designed for graphic artists wishing to work quickly with 24-bit images and enables users to edit, colourise and retouch up to

16 images at once in a multiple window environment. PixaFoto uses a TIGA interface running off a Texas Instrument's 340x0 graphics processor board.

For more information call PixaArts on 0101 415 323 6592.

Modern multimedia

"The personalised information revolution is just beginning". So claimed IBM vice-president, Michael Braun, in a special address to assembled Comdex crowds. This value of multimedia lies in personalisation, not only do people want it, they're willing to pay for it", he predicted, "and that represents an enormous opportunity". IBM's vision of personalised information systems includes computerised televisions, intelligent information selectors and vast sources of data and sensory stimulus all connected and packed on one disc.

Smart TV is one of the projected money spinners, with Braun predicting the advent of an interactive television that can monitor all news feeds and selectively tape any programs that it knows will suit your personal tastes.

While this is still some way off, Braun gave details of a current project being jointly developed by IBM and Synapse Technologies. The Columbus Project is an 'interactive learning curriculum' that covers the life and times of Christopher Columbus containing more than 150 hours of material.

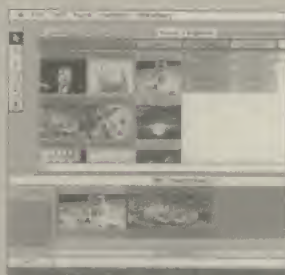
However, Braun insists that multimedia is still in its infancy and that three fundamental things need to happen for it to flourish. Firstly,

developers of multimedia applications must reduce development times, secondly, the price of authoring and end-user systems must drop and finally common standards need to be forged. Enlarging on the challenge further, Braun presented a top ten list of developments which must occur for personal multimedia to emerge.

Excerpts from Columbus's diaries, history books, reference works, film clips and interviews are all cross-referenced

Here's the list in descending order.

- IBM, Microsoft, Apple and Commodore must agree on data standards and applications programming interfaces
- CD-ROM drive prices need to drop to below \$200 and capacities need to increase
- PCs with full-motion video abilities should only cost a similar amount more than other PCs like a colour monitor costs more than a mono monitor.



- Applications developers must have access to all the required tools and services from source
- Customers must drive the industry not vice versa
- A national clearing house of copyright material should be set up to allow easy access to 'media' objects
- Easy access to multimedia data wherever it resides
- Full-motion video titles must sell for around \$25 and the players for less than \$500
- There must be an abundance of top-notch business titles launched as soon as possible
- The information interface should be so personal and usable that millions more people will use multimedia in their everyday lives.

Instant photo quality on a printer

Although it costs \$18,000, Mitsubishi's CHC-S445 full-colour printer is a bargain for anyone wanting photographic quality results.

Atlanta punters were amazed to see high-resolution scans of themselves appearing minutes later as glossy photographs. The machine offers 24-bit colour and 300 dpi resolution, working with a process of 'non-impact dye-sublimation' thermal printing.

Print speed varies according to colour mode, with a speed of 150 seconds per page in 64 tone mode displaying 260,000 colours, and 300 seconds per page in 256 tone mode, capable of displaying 16 million colours.

More information from Mitsubishi New York on 0101 914 997 4999

Opening a new window

Microsoft has announced the launch of **Visual BASIC**, a programming bundle for its Windows operating system.

The package combines a Windows compiler, visual design tools and a powerful BASIC interpreter. Microsoft chief executive officer Bill Gates said of the bundle: "We set out to create the fastest, easiest way to program for Windows. We also wanted this tool to appeal to the broad mainstream of people interested in programming for Windows".

Programs created using Visual BASIC, can be compiled into .EXE (executable) files and then freely distributed. And as far as Microsoft is concerned users don't even have to pay royalties on this.

Companies already using the system include Reuters and Credit Lyonnais.

To use Visual BASIC you will require Windows 3, a minimum of a 286 PC, hard disk, mouse, and 1Mb of memory. Price for the bundle is £163.32. However, if you currently own Microsoft BASIC development kit, and Microsoft QuickBASIC - and have registered as such - you can upgrade for £92.82.

Call 0734 391123. ■

IBM's speedy ceramic chip

IBM is claiming that its latest 121-chip ceramic package has broken all records for the transmissions of electronic signals. The company has proudly announced that the system can transmit at 280 million miles per hour.

This comes at a time when Gallium Arsenide (GA) is coming to the fore as the fastest medium for data, which is basically electronic signal transmission. IBM's ceramic package is still years from commercial application, but it does offer serious competition to both GA and silicon-based systems. ■

Boxing clever

Are you a disk junkie? Do you own more floppies than you can handle? Computer furniture manufacturer Accodata reckons it has the solution.

The Disk File comprises 5.25-inch and 3.5-inch disks boxes, which can be built into blocks to whatever size you require. So, instead of hunting for that obscure program, you will find it neatly filed away in its own box. Price is £60 for 300 disks. ■

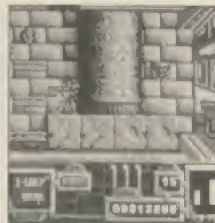


Time travel with a difference

If time travelling maniacs are your idea of good sport then check out Electronic Arts' **Zone Warrior**.

It's a frantic multi-directional platform game featuring five time zones of human history. You'll be persuaded to chase an unsavoury band of aliens who have stumbled across a time hole and decided to wreak terrible havoc through the ages.

The five spots you'll be visiting include Prehistoric, Egyptian, Mediaeval, Ancient Japanese and, of course, Post Nuclear. Don't forget to pack your big guns, there'll be plenty of badies to eliminate. It's out on the



• *Zone Warrior: those ancient Egyptians give a warm welcome to their alien friends from the future.*

ST, Amiga and PC at the end of the month for £25.99. ■

Microsoft versus Apple: the battle takes a new twist

GRAPHICS ADD-ON SPEEDS WINDOWS

The battle between Microsoft Windows and Apple's graphic interface, System 7, heated up this week with news of a new graphic controller chip.

The W5086 from Weitek in the US is claimed by its manufacturers to speed up the running of Windows on 286, 386, and the new 486-based PCs.

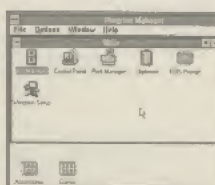
The chip works by incorporating the key Windows commands and functions into its hardware. It passes the previously software-based screen-draw calls to the PC's video controller chip. This lightens the workload of the main processor and consequently speeds up operations of both the Windows itself and of applications running under it.

Weitek claims that the chip is compatible with the video graphics (VGA) screen standard, and

will also work with existing non-Windows based software. It works in monochrome providing 2,048 x 1,024 pixels resolution. In 16 colour mode, 800 x 600 pixels are available, and 256 colours gives 640 x 480 pixels.

Industry pundits have been predicting such a chip since the initial launch of the Windows system. The added speed which is claimed will be provided by the chip provides a massive filip to Microsoft's aspirations in the prolonged Mac versus PC battle.

The release three weeks ago of Apple's critically acclaimed System 7 operating system, which includes 3D screen effects, enhanced screen refreshes and a whole host of user friendly devices, had many computer journalists, users and observers once again lorded



• *Pundits have been predicting a Windows accelerator since its inception. Now that one has finally arrived, does it offer the speed needed to beat Apple?*

Apple's virtues at the expense of Microsoft's.

Microsoft is firmly backing Weitek's chip. Its Windows group manager in the US, Rich Abel said: "The inclusion of graphics acceleration functions en-

hances the performance of GUI environments such as Windows, thus benefiting the user. Microsoft is pleased that Weitek will offer a user interface controller supporting Windows".

Microsoft's plans to further enhance the appeal of Windows with additions of audio and video processing will also be boosted by the Weitek chip. One of the problems with the system has been the fact that too much has been asked from the central processor and software. Minimum memory requirements for a PC running Windows are 640K in 'real' mode, 2Mb in 'standard', and a whopping 4Mb in 'enhanced'. This latter mode is considered to be the nearest equivalent to the Macs O/S which can be run from a machine with 2Mb of memory. ■

Rats saved by PC program

A computer program has been developed which could help save the lives of laboratory animals in school experiments.

Instead of cutting small animals in half, students can simulate vivisection on their computers. The PC program was developed by Dr David Dewhurst at Leeds Polytechnic, who had been given a £10,000 grant from the National Anti-Vivisection Society.

Dewhurst commented: "This

won't stop vivisection overnight, but it is a significant step forward. Students can see on screen the simulated effects of tests on tissues when drugs are added. Traditionally, these are types of tissue which have been removed from animals killed humanely."

He pointed out that the software is also cost effective. One laboratory rat costs £10, but the program, which costs £100, can be used again and again. ■



• *Scientists in Leeds are even now developing ways to save animals from experiments using computers.*

At a perfect price?

WordPerfect corp is offering a free site licence to users of version 5.1 of its word processor software.

The offer begins on 1 June and lasts for 30 days after the, as yet unconfirmed, release date of WordPerfect for Windows.

A spokeswoman for WordPerfect told Express: "We don't have a date for the Windows launch as yet. All I can tell you is that it will occur in the third quarter of this year. That is

sometime between June and September".

A free site licence means that users of WordPerfect 5.1 can run both DOS and Windows-based systems on their PCs and still receive system support. It does not mean that they get a free copy of WordPerfect for Windows.

A dated proof of purchase is required in order qualify for the offer. For more information call 0932 850850. ■

Alignment fault detected on co-processor socket

AMSTRAD PC 3386: CHIP COULD BLOW

Owners of Amstrad's new PC 3386 model using maths co-processors risk blowing up components because of an installation fault on the co-processor sockets.

Amstrad last week confirmed that a number of 3386 models have been made with the co-processor socket 90 degrees out of line. Users adding a co-processor, who are unaware of the problem, risk blowing the chip.

Stephen O'Brien, a member of the technical support team at leading Amstrad distributor Micro Peripherals, said: "I know there's a problem with the daughter board on to which the micro processor fits. When the

customer installs the co-processor in the normal way the chip blows. I don't know whether this was a batching problem or whether it's universal. I've had three calls from customers with problems and there have been five calls into the department."

Amstrad's technical support department confirmed that modification was a potential danger: "If you're going to fit a maths co-processor you need to check the position of the socket. In some cases it is 90 degrees out of alignment. That means if you plug a chip in then you'll blow it to Kingdom Come. You'll have to get an engineer to check it out."

"The problem occurs on a

number of machines where the manufacturer put the socket in round the wrong way. If you plug the co-processor into one of these then it will blow."

An Amstrad spokesman said the fault should not cause alarm: "There's no need to get an engineer out, you just have to look at the manual. The layout of the socket is misleading because it can go in two ways. If you put it in the right way then it's OK. If you put it in the wrong way then then it's not."

"It is misleading and we are altering it now. This only occurs on a small initial batch, but if anyone has a problem we will handle it without question."



*3386: owners may need help with their co-processors from Amstrad.

Boot out that virus

A virus killer has been launched which, according to its producer, can protect the most vulnerable part of your PC, the boot sector.

PC-cillin from Affiliate Software attaches to the parallel port, and is transparent to the system. It lurks in the boot sector to wait for any rogue programs, and duly warns of any disks which are infected, before a virus can be installed.

"In tests, it's been totally successful against all-known viruses," claimed managing director Chris Arden. "We expect a similar success rate for detecting future viral threats."

PC-cillin costs £149. For more information call 0273 602622.

Butler serves up ST program

ST owners are to be offered a 'butler' program packed with useful utilities.

Kuma's Mortimer can be accessed from within all manner of programs such as word processors, databases and programming languages. It features a text editor, printer spooler, virus detector and keyboard macro maker. There are also a bevy of different little tricks such as a magnifier, quick mouse, clock, calculator and ASCII list.

Mortimer, originally written by German company Omikron, costs £32.90. For more information call 0734 844335.

French do an inside job

A French travel agency has run into trouble after using convicts as cut-priced labour in the operation of its computers.

Wagon Lits had subcontracted computerised booking accounts to a penitentiary in Bapaume, Northern France. But the plan to use cheap labour backfired as company chiefs realised that the files contained the exact times when thousands of families would be taking their holidays.

Fearing that convicts would contact pals on the outside, and arrange burglaries, Wagon Lits hastily cancelled the contract and brought in more reliable employees.

Alien animation

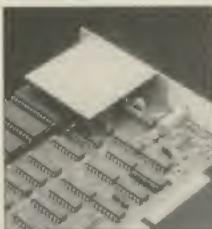
Team17 programming members have been spending their time 'making some very strange noises into microphones'.

The reason why is that they want to get the right 'slurpy-squishy' sounds for the soon-to-be-released *Alien Breed*. Not only are weird sounds coming from the crew, so are claims that the game, due for release in three to four weeks time, is the first true 1Mb game for the Amiga. There are one and two player options, a tennis sub-game, six weapons, acid pools, speech, and of course the sound effects.

When finally released the game will cost £9.95. For more information contact 0924 368151.



* This game, *Alien Breed* (inset) claims to have just the right 'slurpy-squishy' effects around. Well the game doesn't, but the programmers do, they also have a great deal more to say about it...



* Microway's FlickerFixer, a graphics enhancer board designed to eliminate flicker problems on Amiga 2000s using high resolution and VGA monitors, has been drastically cut in price from £325 to £125.

Flickerfixer removes the scan lines which appear when a monitor is used in interlace mode, and, as its name suggests it removes the flicker which occurs in interlaced mode. The firm claims the change is due to "a high volume of sales". Call 081-541 5466.



* The Brother HJ-100. Portable ink-jet printing could be yours, but it's so new not even Brother knows where all the fonts come from!

Portable printing from Brother

Brother is launching its first ink-jet printers: the HJ-770, and portable HJ-100.

The HJ-770 is a 136 column machine which runs at 150 character per second (cps) and can take sheets of A3 paper in landscape mode.

There are four font styles bundled with it: Roman, San Serif, Broughan (Brother's own font, which is similar to Courier), and Letter Gothic. Downloaded fonts can also be stored in an optional 128K battery-backed RAM card. Three emulations are available as standard, ProPrinter, XL-24e, and Epson LQ1050. Brother's own DeskJet printer is also supported.

The portable HJ-100 is the same size as a piece of A4 paper, and is powered by rechargeable Nicad batteries. Brother claims that the batteries will last for 40 pages of printed text before they need recharging.

There is also an optional A/C adaptor available. There are no bundled fonts with this printer, or at least none that Brother is aware of. According to a spokesman for the company: "These printers are so new, that we haven't even seen them".

The HJ-770 is priced at £880 and the portable HJ-100 costs £362.

For more information call Brother on 061-330 6531.

NIBBLES

Olivetti price cuts

Olivetti is to cut the prices of its range of PCS range of PCs by up to 19.6 per cent.

A 20Mb PCS286 now costs £997 as opposed to £1,232. The 40Mb version now costs £1,115, previously the price was £1,350. However, when the recent rises in the VAT rate are taken into consideration, this second price cut disappears. As do the cuts on the PCS386SX (20Mb is a 10.72 per cent, the 40Mb is 10 per cent), the PCS86 (20Mb version falls by 5.8 per cent.

Call Olivetti on 0908 690790.

Speedy fox Pop

Fox Software is claiming that its new database management system FoxPro 2 is 'revolutionary'. It justifies this by claiming that the system provides data access speeds which are 'hundreds of times faster than ever before'.

Apparently FoxPro 2 is capable of manipulating gigabytes of data. It runs on PCs from the AT up to the latest 486 computers. A single user licence for the system costs £699.

Sam old story

Team Sam, the company which was once incarnated as Miles Gordon Technology (MGT) until it went bust, has announced three new products for the Sam Coupé. They are all music oriented: the MIDI Sequencer costs £46.94; Sound Sampler includes a microphone, software, and manual, for £58; and Music Master drives the Coupé's own synthesiser via the QWERTY keyboard, price not released.

Call 0792 700 300.

Scandy Harry

Logitech is to bring out Scanman model 32 for the PC. This monochrome hand scanner can come as a stand alone piece of kit, or bundled with Cathword, its optical character recognition (OCR) software. Not only does the Scanman run under DOS, it is also configurable for Windows.

For now it is only available in the US at £299 for the scanner, £359 for the scanner and OCR software.

Colourful chips

The world's first computer chip capable of controlling colour liquid crystal displays (LCDs) has been announced in Japan. The rather unexcitingly named Micro-PD16426N chip, is able to manipulate up to 4,096 colours on screen simultaneously.

Computing development could switch from West to East

UK PAYS TO JOIN JAPANESE IN AI

Japan is looking to the UK for help with its project to develop the next, or fifth, generation in computing technology.

Japan's Institute for the New Generation of Computer Technology (ICOT) plans to develop mainframe, and consequently personal, computers which rely on Artificial Intelligence (AI), parallel processing and inference technology (known popularly as 'fuzzy' logic). It has approached Bristol University and Imperial College, London for assistance.

EUROPEAN CONSTRAINT

However, the notion of two major UK universities joining forces with the Japanese, at a time when Europe is attempting to forge itself into a major world trading power, is likely to draw constrained, or even negative reaction from across the channel. US reaction is also likely to

be muted. If the Japanese are successful in their developments, the entire focus of computing development could switch from West to East.

Both Bristol University and Imperial College seem to be highly sensitive to these aspects judging from their responses.

In a prepared statement, Prof David H D Warren of Bristol's Computer Science department said: 'ICOT has proposed installing two of its PSI sequential inference machines at the University of Bristol. These will be attached by high speed link to the Multi-PSI parallel inference machine at ICOT in Tokyo.'

'Discussions are proceeding with the Department of Trade and Industry (DTI) to support the UK side of the collaboration. Professor Keith Clarke's group at Imperial College London may also be involved, and share the link to ICOT's PSI'.

As we went to press,

Professor Keith Clarke had not yet replied to our phone calls.

AI is an area in which Bristol University has an excellent track record - for example with the snooker playing robot featured on the BBC's QED program. The Japanese have therefore proposed an agreement for Bristol University to develop an AI-based programming language on its behalf.

The ICOT project was instigated in the summer of 1982 by the Ministry of International Trade and Industry (MITI) in Tokyo, and is now in its penultimate year.

HARD CASH IS WAY IN

Although collaboration from outside Japan is welcomed by ICOT, the way in has to be bought with hard cash. Consequently, Bristol University is now having to seek funding from the DTI. Jim Davison at the DTI's Technology and Research department told

us: 'I try to keep up with ICOT, but I don't know a great deal about Imperial or Bristol. If it is question of a university contacting the DTI for funding, I cannot comment'.

SIXTH GENERATION

The implications for UK computing, which saw its last remaining mainframe manufacturer, ICL, fall into Japanese control earlier this year, extend beyond the end of the ICOT project. As Express reported in its 16 February issue, a £770 million, sixth generation project is due to begin in Japan in 1992.

The sixth generation project is to concentrate on neural networks - a form of computing which derives directly from the kind of AI work which is to be carried out in Bristol. With computers already installed in Bristol, the UK will be in an ideal position to take a leading role in this development. ■

Claris helps Macs to the future

Claris is launching three System 7 compatible software bundles for the Mac.

The Resolve spreadsheet is said by the company to be the 'flagship' of the Claris System 7 family. It enables users to produce full colour graphic representations of their number juggling. These include 3D, wireframe, and contour charts and scripting, or macro, facilities to automate repetitive tasks.

MacWrite Pro, is the next launch. This is an upgrade of Claris' word processing system familiar to Mac users. Upgrades include table creation and manipulation, paragraph and character style sheets, multiple headers and footers, and a 81 colours. Graphic formats such as TIFF, PICT2, and EPSF are supported.

MacProject 11, a project management tool, is the last of the launches. It provides users

with the ability to produce schedules, project graphs, and tables.

Material from all of these programs can be ported from one to another without loss of formatting.

Both systems make use of System 7's functions such as 'publish and subscribe', and Bubble Help.

Resolve costs £323, MacWrite Pro is £205, and MacProject II is £464. ■

Noteable system

NCR has entered the portable PC market with a 5.6lb, 386SX notebook PC.

The NCR 3120 is 1.7 inches thick, 8.3 inches wide and 11.6 inches high, about the size of a ream of A4 paper. It includes a 30 or 60Mb hard drive as standard, complemented by a 3.5-inch, 1.44Mb floppy drive.

The screen is a monochrome, back-lit, VGA liquid crystal display. Expansion is via serial, parallel, mouse and video ports, as well as an external bus connector. 1Mb of RAM comes as standard and can be expanded to 5Mb. An optional internal fax/modem is also on the cards. This allows faxes to be sent via V27 protocol at 4,800 baud and V29 at 9,600 baud. The entry level machine with 1Mb RAM, 30Mb hard drive, single floppy, and VGA monitor costs £3,724.75. ■



• NCR's paperweight portable PC, available with optional internal fax/modem. Call NCR on 071 725 8248



Space age printing

Mannesman Tally's latest portable printer, the MT735, has been short-listed to fly aboard the space shuttle Columbia. The printer has already been tested in a weightless environment.

The MT735 is a six pages per minute machine, it measures 29cm x 22cm x 6cm, and weighs 3.8Kg. Power is from rechargeable batteries. It also has a cut-sheet feeder which can take 80 sheets of A4. Print resolution is 300 x 300 dots per inch. It cost £1,760.15. Call 0734 788711. ■

WIN A PC COMPETITION

INTRASET LTD
Tel: 025 72 76800 (Main office & 24 hr order line)
Helpdesk 0490 3284 (weekdays 3-4pm)
Fax your order on 025 72 74753



All prices include P&P and VAT. Overseas orders please add £5.00

CASHMASTER HOME AND BUSINESS ACCOUNTS

- Master your own finances. CASHMASTER is the easiest to use, most versatile accounts program yet written.
- CASHMASTER is suitable for both small business accounts or home finance use.
- We wrote CASHMASTER for our own use out of sheer frustration with the other so called easy to use packages. CASHMASTER allows you to input entries in one easy operation and yet allows you to extract the absolute maximum of information in an impressive array of statements and reports: just look at its range of features:
- Easy natural data entry - just like a handwritten ledger.
- Full VAT analysis or omit VAT altogether if you wish.
- Any amount of ledgers at one time.
- No set time periods, span any time period - no one year limit.
- Reports can be produced over any time span (1 day to 100 years).
- Up to 100 user definable Class and 20 Accounts Codes.
- Detailed statements by selected Classes or Accounts.
- Profit & Loss Statement.
- Tagging of entries for report selectivity.
- Entries can be inclusive or exclusive or zero VAT.
- Automatic repeat of entries (standing orders etc.) yearly, half yearly, quarterly, monthly, fortnightly or weekly.
- Insert entries anywhere in ledger, CASHMASTER automatically sorts into date order.
- Search and find option on any entry anywhere within ledger.
- Reports can be output to screen, printer or disk file.
- Reference field for every entry (Invoice no, cheque no. etc.).
- Split and merge ledgers at any time.
- All functions available from main programme screen.
- Class and Accounts codes visible at all times.
- FREE pop up running total calculator called up with one key press.

CASHMASTER IS THE MOST USER FRIENDLY, POWERFUL AND VERSATILE ACCOUNTS PACKAGE YET - YOU WON'T BE DISAPPOINTED.

And now available with...

CASHMASTER INVOICING & STOCK CONTROL

- Full customer data file - easy to find account records.
- Full stock data file, price lists, re-order lists.
- Full invoicing with user defined messages.
- Full invoice editing, invoices to & deliver to fields.
- Pre-paid, account or credit note, full VAT facility.
- Settlement, no return & line discounts.
- Stand alone invoicing/stock control or integrates fully with CASHMASTER for a FULLY FEATURED ACCOUNTS/INVOICING PACKAGE costing less than a quarter the price of its rivals.

CASHMASTER £39.95
CASHMASTER INVOICING £39.95
BOTH PROGRAMMES TOGETHER £69.95

££££ PROFIT FROM YOUR MICRO ££££

RECESSION? WHAT RECESSION?

- Make your Micro earn!
- Whatever make of micro you have you can use it to make a good income even if you only have a couple of hours spare each week!
- This is not PIE IN THE SKY, MAKE A MILLION BEFORE BREAKFAST nonsense but a true report of exactly the sort of steps that we ourselves took at INTRASET.
- We have put together a package of easy, sensible business ideas which can easily be used by anyone with any Micro.
- NO COMPUTER EXPERTISE REQUIRED.
- Earn £££'s from home doing what you enjoy doing - using your computer.
- You probably already have everything you need to start earning.
- Hundreds of potential customers in your area who will GLADLY pay for your services. We tell you how to find them!
- Part time or start your own full time business. Ideal for housewives/husbands, unemployed etc. Very little capital outlay on projects.
- Full step by step sixty page book PROFIT FROM YOUR MICRO comes complete for just...

£14.95 inclusive

SPECIAL DISK DEAL

DISK	£	£	£
	10	50	100
3" CF2 (AMSOFT)	19.00	92.50	180.00
3 1/2 DSD	6.90	32.00	60.00
5 1/4 DSD	3.90	19.00	37.00

GENUINE HIGH QUALITY DISKS

POOLMASTER The Football Pools Predictor

- "A LICENCE TO PRINT MONEY" - Mr F C Hammond of Essex
- "WE HAVE WON MANY THOUSANDS" - Mr P E Roberts of Dorset
- Just a couple of the many unsolicited testimonials about this truly amazing Football Pools Predictor Programme which has consistently astounded us with its accuracy. Check out its features:
- Predicts homes, aways and draws.
- No fiddly typing in of team names: unique indexing system for quick entry of fixtures and results just type in the results each week from your usual newspaper and the programme updates itself.
- Uses scientific formula which is the result of many years study of the football pools to give a strike rate which is consistently higher than the laws of average.
- Also has a SEQUENCE PREDICTOR option in addition to form Predictions which analyses coupon number sequences. This option has astounded us in the past and continues to do so.
- Can be used for league and cup matches. Updates season after season. No need to buy a new copy every season.
- Send for POOLMASTER today and increase your chances of that JACKPOT. Comes complete with manual and informative Pools Guide.

DISKS AND TAPES £24.95

★ ★ SPECIAL OFFER ★ ★

SPECIAL COMPENDIUM DISKS/TAPES
POOLMASTER/COURSEMASTER £44.95
BUY ANY THREE PROGRAMMES AND
RECEIVE PROFIT FROM YOUR
MICRO FREE OF CHARGE.

THE GRAPHOLOGIST

HANDWRITING ANALYSIS PROGRAMME

- "UNCANNILY ACCURATE" - 8000 PLUS MAGAZINE
- Analyse YOUR handwriting, or your partners, friends etc. What are they REALLY like? Your handwriting always reveals your true nature, state of health etc.
- This programme is a must for anyone interested in handwriting analysis, both expert and beginner alike.
- The programme will provide an analysis of a subject's handwriting ranging from a simple signature analysis to a full 15 page complete character report. Ideal for prospective employers, experienced graphologists or anyone interested in this fascinating art.
- All you need is a sample of the subjects handwriting and follow the simple on screen instructions. Upon completion you are left with an in depth report detailing all aspects of your subjects character from career ambition, state of health through to sexual preferences and megalomania!
- You may even edit this report using your word processor for representation to your subject/client.
- THE GRAPHOLOGIST is a must for serious business use or simply have loads of fun entertaining your friends whilst learning the finer aspects of this fascinating subject.
- COMPLETE WITH MANUAL OF GRAPHOLOGY

Price £49.95 inc. VAT and P&P

All programmes available for IBM/PC & compatibles, all Amstrad PCs, Atari, Amiga, CPC 6128 (unless otherwise stated). Perm-Master also available for Commodore 128 disk. Coursemaster and Poolmaster also available for all Amstrad CPC's, all Spectrums and C64 & 128

COMPETITION RULES

Every purchase made qualifies you to enter our competition draw. The total value of your purchases will determine the prize won.
There will be one 1st prize only per draw.
Spend up to £20.00 - 1st prize = a Star LC printer.
Spend up to £40.00 - 1st prize = Amstrad PC1512 SDMM
Spend over £40.00 - 1st prize = Amstrad PC1840 SD colour.
5 runners up will each win full set of Intraset software as above. Intraset's decision final on all matters.
Send SAE for list of winners.
Draw dates: 28/9/91.

COURSEMASTER THE COMPUTER HORSE RACING TIPSTER PROGRAMME

- BEAT THE BOOKIE FOR A CHANGE!!
- RATES ANY RACE using racecard in any daily paper or racing paper - BOTH FLAT AND JUMPS
- Gives clear forecast of best selection PLUS second and third for Tricasts etc. and even recommends type of bet.
- Works out your WINNINGS on most popular types of bet ie. SINGLES, DOUBLES, PATENT, YANKEE, CANADIAN, etc.
- MAINTAINS A BANK ACCOUNT - Bet like a PROFESSIONAL!
- PLUS the amazing COURSEMASTER SYSTEM BET.
- This superb easy to use betting system regularly provides our customers with MAJOR WINS for small stakes - try it and amaze yourself. Will even PRINT OUT YOUR BETTING SLIP for you if you have a printer!
- COMPLETE WITH 20 PAGE BETTING GUIDE AND MANUAL

DISKS AND TAPES £24.95

PERM-MASTER

If you enjoy doing the Pools and regularly use perms as we at INTRASET LTD. recommend then checking your coupon can be a nightmare. Have you won or haven't you? Perm-Master ends the agony by checking your perm for you. Simply tell it which of your coupon numbers are draws and it will do the rest, telling you how many winning lines you have. Perm-Master comes complete with several of the top perms already built in, but if your favourite perm is not there then simply create your own using the unique perm editor.

- Fast and simple to use
- Unique PERM EDITOR
- Create your own perm using the inbuilt perm calculator, test your own theories etc.
- For most block and single line perms

Price £19.95

SPOT-THE-BALL

For all SPOT-THE-BALL fans this programme is a must, no more tiresome counting of 'x's or messy rubber stamps. Use your computer to do your SPOT-THE-BALL coupon.

Just tell your computer where you think the ball is using the screen template supplied.

Will print out up to 540 micro-fine crosses in your chosen shape, or simply tell it to choose at random.

Learns as it goes - tell it where the ball is every week and build up a database of results to use in SPOT-THE-BALL's sequence predictor option.

Works with any Epson compatible dot matrix printer or build your own printer driver using the on screen option.

LET SPOT-THE-BALL fill in YOUR COUPON this week

SPOT-THE-BALL £17.95

P.C. PATIENCE

- Four addictive P.C. card games to test your skill and luck.
- P.C. PAIRS, THE INTRASET CASINO, P.C. GOLF & CHESS PATIENCE
- Ideal relaxation whilst the boss is not looking, but don't blame us if you get totally addicted. (But we know you will!)

P.C. PATIENCE £14.95 (IBM/pc compats only with 256K + CGA monitor required)

Spend over £100 and claim this item free!!

INTEREST FREE CREDIT TERMS

Spend over £80 and spread the cost at no extra charge (Cheque purchases only). Simply divide your order by 4 and send us four cheques each with your name and address and cheque guarantee card number. Date the first cheque with today's date and post-date each of the other cheques by one month i.e. 1/5/91, 1/6/91 etc. We will then hold each cheque until it is due. Sorry not available on hardware items.

HOW TO ORDER: CHEQUES, P.O.'S TO: INTRASET LTD (DEPT. NCE)
FREEPOST 10 WOODSIDE AVENUE, CLAYTON-LE-WOODS, CHORLEY, LANCs. PR6 7BR
OR PHONE/FAX AS ABOVE FOR LIGHTNING FAST SERVICE.
WE ACCEPT ALL MAJOR CREDIT/CHARGE CARDS.
SEND SAE FOR FREE SOFTWARE CATALOGUE

SOUNDTRAP 3 AUDIO SAMPLER

37.50
SOUNDTRAP 3
30.60

1. HIGHEST QUALITY
2. SMALLEST ON THE MARKET
3. FITS A1000 OR A500/2000
4. PRINTER PASS-THRU
5. GAIN CONTROL
6. SOFTWARE, SCREWDRIVER & LEAD INCLUDED.
7. COMPREHENSIVE MANUAL

Unless otherwise stated, all our products carry a 12 months warranty, plus Omega Projects priced UNLIMITED SUPPORT

MINI-MIDI INTERFACE + --SOFTWARE--

24.99
MINI MIDI
20.38

1. HIGHEST QUALITY
2. SMALLEST ON THE MARKET
3. FITS A500/2000/1000**
4. DATA INDICATORS FITTED
5. 2 METRES CABLE BUILT IN
6. FULLY OPTO-ISOLATED
7. TRIED & TESTED DESIGN

**A1000 requires special adaptor

AMIGA
A1500
COMPUTER

INC. SOFTWARE
NO MONITOR
714.95

INC. SOFTWARE
& MONITOR
979.95

AMIGA A500 BASE PACK 329.95

AMIGA A500 SCREEN GEMS PACK 374.95

AMIGA A500 1Mb BASE PACK 352.95

AMIGA A500 1Mb SCREEN GEMS PACK 397.95

IN500 with 1 5Mb INSTALLED.....	£399.95
SN 500 OK.....	£389.95
SN 500 with 2Mb INSTALLED.....	£179.95
X-RAM OK (for A500/1000).....	£179.95
X-RAM with 2Mb INSTALLED.....	£286.04
X-RAM with 8Mb INSTALLED.....	£541.47
CO-TABYTE OK (for 80000).....	£144.00
CO-TABYTE with 2Mb INSTALLED.....	£255.38
CO-TABYTE with 8Mb INSTALLED.....	£499.95
INMATE OR + SCSI + 68881 SOC.....	£281.14
INMATE -CMB + SCSI + 68881 SOC.....	£358.56
4 Channel Audio Mixer + MIC.....	£35.71
Sound Trap 3 + Mini-Midi.....	£48.53
Sound Trap 3 + Audiomaster 2.....	£55.14
Sound Trap 3 + Audiomaster 3.....	£86.80
Mini-Midi + Music-X.....	£117.45
Audiomaster 2.....	£39.80
Audiomaster 3.....	£58.14
X-Copy Professional v2.1.....	£33.87
Byte 'N' Back (Wideshooting) v1.5.....	£23.38
3.5" Ext. drive + on/off sw.....	£81.25
KCS Power card (PC emulator).....	£24.95
AT-ONCE card (PC/AT emulator).....	£200.21
5.25" ext. disk drive (40/80 TRK).....	£112.34
Parallel printer cables.....(8mm)	£12.95

23 way connector no hood.....	£1.52
23 way connector + hood.....	£2.03
X-Copy hardware only.....	£10.17
3.5" blank disks.....	£.50
10 capacity disk boxes.....	£1.53
40 capacity disk boxes.....	£4.80
80 capacity disk boxes.....	£5.06
Dynamic Microphones.....	£10.17
Condenser Microphones.....	£15.28
Pair Hi-nat speakers.....	£20.38
Pair Panasonic speakers.....	£30.80
Joystick extension lead.....	£2.55
1.2 metre Midi leads pair.....	£3.01
3 metre midi leads pair.....	£4.04
5 metre midi leads pair.....	£5.06
A500 replacement int. drive.....	£58.14
A1500/2000 internal drive.....	£91.25
A500 CMOS RAM chips (512K).....	£25.54
B2000 16 pin DRAMS (2Mb).....	£112.34
256 "1" DRAMS 150ns.....	£1.28
1.3 ROMS.....	£39.71
A3000 RAM 385"4 30ns 1Mb.....	£71.47
A3000 RAM 132"4 30ns 4Mb.....	£308.47
A500 replacement modulator.....	£25.00
A500 dust covers.....	£2.99
Mouse mats.....	£1.99

NAKSHA MOUSE 24.95 GB-ROUTE 32.95 FLIGHT-SIM II 29.95

DELUXE VIDEO 3£49.95
DELUXE PHOTOLAB.....£49.95
THE WORKS (P/NUM) ..£49.95

A590 REPLACEMENT 20Mb HARD DISK 89.95 WHEN AVAILABLE

1 ONLY
20Mb BERNOULLI
DRIVE + 20Mb
CARTRIDGE
200.00

512K RAM inc. CLOCK & SWITCH 25.49 22.43 NO CLOCK

**FATTER AGNUS
CHIPS
NOW IN STOCK AT ONLY
£61.45**

ALL PRICES INCLUDE VAT

OMEGA PROJECTS
14 DERWENT CLOSE
CULCHETH, WARRINGTON,
CHESHIRE, ENGLAND,
WA3 5DY

0925-763946

FOR ORDERS & TECHNICAL QUERIES

0860-795260

IF WE ARE OUT OF THE OFFICE

ALL CHEQUES, P.O.'S ETC
SHOULD BE MADE PAYABLE
TO OMEGA PROJECTS
WE ALSO TAKE
ACCESS, VISA,
MASTERCARD &
EUROCARD

OPENING TIMES:

MON-FRI: 10.00am - 6.00pm

SAT: 10.00am - 5.00pm

CALLERS WELCOME BY APPOINTMENT

POWER OPTIONS

GVP SERIES 2

GVP A500 IMPACT SERIES 2 HARD DRIVE

EXPANDABLE TO 8 MEGABYTES OF RAM USING SIMMS

42Mb drive.....	£479.95
52Mb drive.....	£529.95

GVP SERIES 2 1500/2000 8Mb MEMORY CARDS

with 2Mb RAM ONLY.....	£179.95
with 4Mb RAM ONLY.....	£259.95
with 8Mb RAM ONLY.....	£419.95

GVP SERIES 2 FAAAST CARD + HIGH SPEED SCSI

SCSI + expands up to 8Mb using SIMMS

OK NO drive.....£200.00

This board will accept any of the bare SCSI drives opposite each 2Mb of SIMM modules.....£79.95

GVP 68030 ACCELERATORS

GVP A3001 for A1500/2000	
28MHz 68030/68882 + 4Mb 32bit RAM.....	£1349.95
50MHz 68030/68882 + 4Mb 32bit RAM.....	£2099.95

CSA MEGA MIDGET RACER A500/1500/2000

25/33MHz 68030, 20MHz to 50MHz 68882 SRAM available to shadow KICKSTART into 32 bit ROM and 1-8Mb of TRUE 32 bit wide RAM

PRICES START AT £384.95 FOR 25MHz BASE BOARD. CALL FOR MORE DETAILS ABOUT OUR UPGRADES & BUY BACK POLICIES.

Full technical support is given by inhouse fully experienced engineers.

REPLACEMENT A500 INTERNAL DRIVE £56.32

BARE SCSI/XT DRIVES

A590 20Mb Western Digital	£319.95	W. Digital 85ms 20Mb	£89.95
A590 48Mb Seagate	£474.95	Seagate 28ms 48Mb	£228.95
A590 52Mb Quantum	£499.95	Seagate 20ms 83Mb	£333.95
A590 83Mb Seagate	£573.95	Seagate 15ms 111Mb	£506.95
A590 105Mb Quantum	£649.95	Seagate 15ms 142Mb	£559.95
A590 111Mb Seagate	£769.95	Seagate 15ms 211Mb	£648.95
A590 120Mb Quantum	£754.95	Quantum 17/9ms 52Mb 64K cache	£239.95
A590 143Mb Seagate	£819.95	Quantum 17/9ms 105Mb 64K cache	£391.95
A590 170Mb Quantum	£859.95	Quantum 15/8ms 120Mb 64K cache	£506.95
A590 210Mb Quantum	£929.95	Quantum 15/8ms 170Mb 64K cache	£597.95
A590 211Mb Seagate	£949.95	Quantum 15/8ms 210Mb 64K cache	£670.95

Add £60.00 for 2Mb RAM if purchased with any of the above drives.

Injection moulded case for bare drives, including fan, pass-thru, SCSI lead, and power lead.....£90.00

ALL DRIVE CAPACITIES QUOTED ARE UNFORMATTED

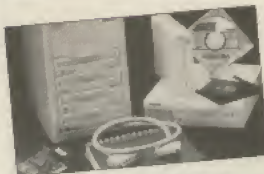
HARMES 68020 ACCELERATOR BOARD

7114/20MHz 68020 board capable of accepting 16 to 30MHz 68881 co-pro & upto 4Mb of RAM with 68000 fall back mode.

PRICES START FROM 159.95

CD goings on

PRODUCT: CD-ROM Drive
NAME: Toshiba XM-3301B



• Driving forces behind the Mac and PC, or merely CD entries into the world of data storage?

The Mac and the PC meet and agree at long last. This drive, available in the UK via Highland Computers, comes from Toshiba. The company claims that the drive has an average access time of 325 milli-seconds (ms). Users are not limited to one size of Compact Disc either, both 12cm and 8cm versions are catered for. They also support both audio and data transmission.

The drives come in internal, external, and external four-drive tower form and are compatible with PC-AT, PS/2, Mac, and Toshiba laptops.

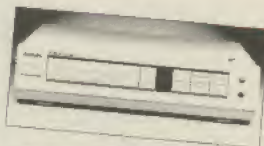
Price: This depends on which configuration you require. Toshiba were 'unable' to give us an entry level or top-end price. However, we will have this information for you in next week's issue.

Availability: Now
Target users: According to Toshiba: "Sophisticated Mac and PC users who need high speed access to data on tap".
Contact: 0444 235000

Perceived competition: Hitachi

Affordable CD-ROM

PRODUCT: CD-ROM Drive
NAME: Philips CDD461



• The cheapest CD-ROM in town is Philips' new CDD461

At last an affordable CD-ROM drive for the PC. The CDD461 from Philips, which is collaborating with Sony on CD-I development at the moment, is compatible with PC/XTs, and PS/2 computers. One of the major factors about this drive is that it features audio-out with front panel controls - it even has the tray loading system familiar to owners of stereo CD players.

A range of applications are already available for the drives, including Philips'

WHAT'S NEW

The quick reference guide to all the newest of the new in computing this week.



Fast worker

• It looks expensive now, but this machine's descendants could be affordable by the end of next year. So what does this powerhouse offer?

PRODUCT: RISC portable workstation
NAME: Sony NWS-3260

Sony has just announced the launch of this 8Kg portable RISC workstation. The company claims: "Quite simply there has never been such high-resolution and power in a portable computer before." With the specifications of this laptop the claim is difficult to doubt.

It delivers 17 million instructions per second (mips), with 1.8 million floating point operations per second (MFLOPS).

UNIX 4.3, X-Windows 11 and Sony's NewsDesk user interface are incorporated into the system in their complete formats.

The central processing unit (CPU) is MIPS Computer System's R3000. This is complemented by the R3010 floating point accelerator.

16Mb of main memory come as standard, along with a 406Mb internal hard disk, and a 1.44Mb floppy drive. The monitor is an 11 inch monochrome liquid crystal display (LCD). Like Sony's NWS-3865 (see the Nibbles column on

page 8) the NW-3260 comes with a built-in Ethernet interface to accompany its parallel, serial and SCSI ports.

PRICE: £10,563.25
AVAILABILITY: Now
TARGET USERS: Software engineers, and anyone who can afford this high level of computing.
CONTACT: Sony Microsystems on 0784 467228
PERCEIVED COMPETITION: None

European Business Guide. It can be controlled as an MS-DOS extension which makes installation an easy process.

Price: £468.82
Availability: Now
Target users: In the words of a Philips spokesperson who talked to Express this week: "Anyone who wants a CD-ROM player at a price they can afford".

Contact: Philips on 0306 75777
Perceived competition: Hitachi and Toshiba (although neither can provide a drive at this price)

users, are making use of it. This allows managers to produce invoices and reports for each department.

A 'cyber' aspect of the software is a 'module' called Robot which occasionally logs on to the system as a pseudo-user. It then carries out a number of the tasks which a 'typical' user would do and is then able to measure screen response time, and relay the data back to the manager.

Price: £3,519.12
Availability: Now
Target users: UNIX system managers
Contact: Pittman Professional Systems 0732 63881
Perceived competition: None

Rob-Manager

PRODUCT: Stats and monitoring software
NAME: Informer

Informer is designed to be pro-active in tracking possible trouble spots on UNIX-based systems. The software comes with pre-defined areas at which to look, however these can be further configured by the user.

The software monitors a system and produces graphical illustrations of the ways in which single users, or groups of

Lease, lease me

PRODUCT: Lease line modem
NAME: Nokia N1920

This one is strictly for the business user, but we thought that it would be of passing interest to the comms aficionados amongst you.

The Nokia can handle a massive data transmission rate of 19,200 bits per second (bps), as well as a wide range of lower rates including 16,800. It is designed as a four-wire, point to point,

lease line piece of hardware. It supports V33, V29 and V27 bis standards.

A lease line modem is one designed to be used for private communications rather than over the public telephone lines - in-house data communications for businesses for example.



• Do you need secure in-house communications? Nokia's lease-line modem has all the speed and security you're after

Price: This depends on your specific needs and the size of the system you are setting up. So give Nokia a call
Availability: Now
TARGET USERS: Businesses, and users who require rapid data communication over private lines.
Contact: Nokia on 081-569 7700
Perceived competition: Nokia were not prepared to say.

Hard Drives!!!

Our drives feature the same ICD case-external SCSI ID changer, external SCSI port, and DMA through port. But we now feature Plus Impulse Drives (A Quantum company) with a 2 year warranty, and a 64K cache on drive. All our drives have clocks!

ICD w/Plus 105Meg 11ms	£529
ICD w/Plus 52Meg 11ms	£439
ICD w/Plus 40Meg 12ms	£425
Bare Plus Impulse 40Meg 12ms	£255
Bare Plus Impulse 52Meg 11ms	£269
Bare Plus Impulse 105Meg 11ms	£340

SYQUEST SQ-555 based drive:

The famous ZCS-44 removable extra cartridge	£639
a three-pack	£86
bare SQ-555 SCSI (w/cart)	£231
	£431

Combo drives- add another bare.

**The Megafile 44 is a SYQUEST.
Ours comes with ICD host / software.**

**Drives come set for US, UK or other power.
They come with PD software.**

ZRAM upgrades

520 to 2.5mb	£150
Mega 2 to 4mb	£150
Others - 2.5mb	£159
Others - 4mb	£235
STE SIMMs	£45
TT SIMMs	£47

FREE POST:

ICD Cleanup	£32
Quick ST 2.22	£19
Turbo ST	£28
Neodesk v.3	£34
UIS 3	£18
PageStream	£104
Fonts	£20
Calamus	£195
Font Editor	£66
Outline	£172

We guarantee all hardware - we even pay return shipping

New Gadgets (by Small)!!! 68030 SST

Go to TT speed on your ST with a 68030 chip. Then you can add Fast RAM (up to 8 MB), and a coprocessor.

Bare Board (needs A, B, or C)	£435
Option 'A' - 16mhz 68030	£145
Option 'B' - 16mhz 68030, 4 1Mb SIMMs	£335
Option 'C' - 33mhz 68030, 68882, 4 SIMMs	£579
Option 'D' - 4 1Mb SIMMs	£189

Shipped with a 68030 version of TOS.

MegaTalk

A fast communications board for Mega STs. Adds two serial ports (up to 900,000 baud!!!) and a true SCSI port for Spectres (v. 3 or higher) this means...

AppleTalk!

Apple MIDI!

MAC hard drives!

In Atari mode you get 3 serials (BIOS drivers included)

Spectre v. 3.1 £204

**ICD Adspeed St 8/16 mhz £210
with 64k cache**

Dealers: we offer trade prices on some items

Zicount Computers & Service

8102 Thoreau Drive

Bethesda, MD 20817-3160 USA



All prices include VAT.
Post: £12< £200: £8< £500: free>=£500
Voice: 0101 + (301) 229-2407
Fax: 0101 + (202) 333-1756

From ONLY

99p
Per Disk
+P&P



Catalogue Disk

+ P&P
75p

BUSINESS

- 200 Q-Base - Database Program
- 206 Clerk Accounts
- 209 Amiga Database
- 212 Electrocad Demo
- 215 Clip Art
- 219 Wordwrite Wordprocessor
- 226 Journal - for your accounts
- 233 C-Light Ray Tracking
- 230 Bank Master - For all your bank records
- 258 Wordprocessor
- 295 Business Card - Make yours now
- 248 Analytical Spreadsheet Graphics - Sort them all out

UTILITIES

- 500 6800 Assembler
- 560 Red Sector Demo Maker
- 533 150 Utilities
- 571 TV Graphics - x2 disks
- 510 Complete C Manual x 3 disks
- 520 DBW 3D Rendering
- 581 8 Track Sound Tracker
- 518 North C Compiler V1.3
- 502 Fonts & Ram Manager
- 517 Kickstart 2
- 556 C Manual 1, 2 & 3
- 592 Ultimate Virus Killer - Best Yet
- 510 T.Bag 40A & 40B
- 522 Games Music Creator
- 595 C-Light

DEMOS

- 832 Iraq Demo
- 891 Wizz Cal
- 896 Debbie Jordan Slideshow
- 801 Razor 1911 - Best Demo
- 845 Kathy Lloyd Slideshow
- 874 System Violation
- 807 Blood Sport

GAMES

- 700 Treasure Island
- 725 Blizzard
- 777 Paranoic
- 742 Learn Play 1 & 2 for children
- 789 Starfield
- 726 Castle of Doom
- 766 Computer Conflict
- 710 Lady Bug
- 746 Pseudo Lop
- 791 The Evil Dead
- 785 Star Trek - The Next Generation
- 729 Star Trek - The Final Frontier
- 747 Bong - Quit Good
- 794 Colossal Adventure - World Adv.
- 715 Pipeline
- 761 Battleforce
- 730 Frankie Freddie - Good game
- 751 Arcadia
- 777 Holy Grail Adventure
- 732 Golden Fleece
- 720 Grave Wars
- 782 Dynamite Dick
- 737 Return to Earth
- 762 Games Galore Vol. 1 to 7 - Various good games

MUSIC

- 970 D-Mob Music
- 991 Tiffany - I Think We're Alone Now
- 996 Dance Mix Vol. 1
- 982 Digital Concert 1-6
- 980 Blues Brothers
- 950 Limited Edition - Dance Mixes 1-3
- 969 Michael Jackson - Bad
- 955 Auld Lang Syne
- 987 Total Remix
- 995 Dirty Dancing
- 967 Sun Sounds of the Summer
- 997 Madonna - Hanky Panky
- 975 Groove Is In The Heart
- 988 Dynamite Beats 4
- 961 Banging Raves No. 1
- 978 CD On A Disk
- 985 The Winklers Song - Ivor Bign
- 964 Inner City - Multi Trax 1
- 966 Depeche Mode

32p
3.5" DS/DD
BLANK DISKS
+ £2.95 P&P

Free membership ★ Regular updates on all new PD to members

Only 60p P&P per order
1-5 disks = £1.25 each
6-10 disks = £1.15 each
11-over = 99p each

HOW TO ORDER:

**TEL: ENQUIRIES
TEL: 091 4192805**

Choose from this ad or from the catalogue disk
75p + P&P. Send to:
SCS COMPUTER SOFTWARE,
Unit 78, Horsley NCE, Barmston,
Washington, Tyne & Wear, NE38 8HQ

SHOPPING EXPRESS

CONTENTS

AMIGA.....	16
ST.....	17
PC.....	18
ARCHIMEDES.....	19
CPC.....	22
C64.....	23
SPECTRUM.....	25
MAC.....	26
WHOLE WIRED WORLD.....	28
CIRCUIT CITY.....	30
TECH TIPS.....	32
PROGRAMMING.....	40
THE EVENT HORIZON.....	41
EXPRESS ON-LINE.....	42
THE PD COLUMN.....	46

EXPRESS MAIL

Write and tell Haydn Fitz-Williams what you think! Reach him at: **Express Mail, 30 Monmouth Street, Bath BA1 2BW.** Sorry, no personal replies, even with an SAE and remember, only **SOME** letters win a fiver!

Time Warp

It seems that a large number of Express readers are stuck in a temporal loop! While I agree that it's not nice to see your machine specific column dropped/changed/cut down, it is a fact of life that we go forward developing new technology.

How much more can be said about the BBC B, Spectrum or whatever 8-bit machine? After all they ruled the roost for many years. 16 and 32-bit machines are now the thing.

Perhaps there's a new market for a magazine like *Classic Cars* for old computer owners?

M Jones Skelmordale Lancs

PRACTICAL CLASSICS? Seems to me the main problem with owning some of the older machines is knowing when to call it a day. But with all the emulators kicking around these days on the 16-bits it's not as if you can't use all that old

software any longer is it? I don't know about the idea of a specialist magazine though. Anything upto 80 per cent and beyond of any mag's revenue comes from advertising - so I doubt whether there's enough out there to support one.

Cheaper access

Why don't you rig up a deal with a free bulletin board instead of expecting us to correspond via on-line services that cost us money to subscribe in the first place.

Paul Banks, Chelmsford Essex

A GOOD point and one we looked into immediately. We've now got an area on Aspects where you can leave mail. So, get in touch on 061 792 0260

Tack tips

One of the columnists in the June issue of *Atari ST User* appears to

be clinically insane (well what did you expect - Ed) He advises in the beginners column for new users of STs, that it is okay to leave a floppy disk on top of a TV for a week, under a telephone, rub it with a magnet, subject it to heat etc and it will be OK. He claims that if the data is lost it's because the disk is at fault to begin with. If this is the kind of advice that a popular mag gives to its new readers then they would be better off not giving it at all

Clive Parker Pill Bristol

SOUND TECHIE advice is an essential part of any magazine's service to its readers. That's why we were glad to replace Uncle Tech Tips with Big Keith.

Copy cats

Re: the piracy debate. It is next to impossible to produce an uncopyable system. For example, cartridges were supposed to have stopped pirates but, as some of your readers may be aware, there is an illegal Nintendo cart with 60 games on it floating around on the black market.

CD-ROM games or software might be unassailable at the moment but some bright spark will find a way to beat the system. I used to hack games - why? - because they were there. It's no good fining game hackers or threatening jail that just makes it

more exciting. What's needed is re-education. The industry could find a lot of excellent programmers just sitting at home and it could be beneficial for the industry to talk to pirates. This would give the industry the chance to turn the pirates on each other.

Ian Fereday Penn Wolverhampton

I THINK we should begin to make a distinction between pirates and hackers. I can see people hacking games for the sake of the coding challenge - this seems to be somewhat harmless and entirely different from people who crack, swap and sell the software on. But I guess in practical terms it's a meaningless distinction. Who's to prove the guy who had £16,500 worth of copied games the other week didn't crack them all himself?

On-line mail

Own a modem? Then squirt us a letter. Express has its own area on Aspects bulletin board (061 792 0260) where you can leave mail and upload/download files.

We also have our own conference on CIX. Why not give this on-line service a ring on 081-390 1244 and talk to us direct!

You can also get in touch on Presitel and Micronet @011112623, or on Telecom Gold @84:tx1152

ULTRA-CASH MAGNETIC LOOT ATTRACTION UTILITIES - PARTS 5 & 6



• Yes, a life of luxury in Rio could be yours. All you need is a suit and tie, a few qualifications and access to a computer

5 Here's a way guaranteed to make cash from your micro. Hang around any College of Further Education at the end of July when they're enrolling the night classes.

Ten minutes before enrolment is due to stop, stroll over to the girl on the computer who's taking the details and say: "The principal wants to see you in his

office immediately. I'll look after this." When she disappears, use the two floppies concealed in your undergarments to divest the PC of its program and data files.

Once back at home, you can load the program and data, throw away all the normal course lists and concentrate on the sort of courses that only an idiot would sign up for. By extracting the names and addresses from all of the Underwater Hang-Gliding, Astronomy for beginners, travel photography and Basket Weaving course members, you'll have a list of names that you can throw into a random sort routine. Next, using the office PC and laser printer you can knock up some professional looking computerdating stationery and mailshot them all. Let's face it, if ordinary people will pay hundreds of pounds year in year out for computer dating, these sorts are the key to your personal goldmine.

Major Rory Jarvis, Milton Keynes.

OF COURSE this astonishing loot attraction utility shouldn't be loaded by anyone possessing the slightest modicum of respect for his fellow human beings. It could seriously damage your health.

6 Here's a 'loot attractor' I came across a few years ago which I thought you might like to know about. You'll need 5 'O' levels or so but the only cash outlay required is to buy yourself a suit and tie. You then write to every high street bank in your immediate locale requesting an interview with the manager. You then visit the bank in question. After the interview you wait a few days or so until you receive a confirmation. You then start work at the beginning of the following month as a clerk. After five years you will become Assistant Branch Manager, learn all the passwords, transfer as much cash as you want to your own private Swiss account and disappear to a life of luxury in Brazil. Simple.

Jerry Parkinson, Rio De Janeiro

Blind androids

The Android from Rhyll should have his 'superior' digital scanning checked out. If it was working properly he would have noticed that the game being played on the Atari 8-bit in DARYL along with *Missile Command* was in fact *Caverns of Mars*

Chris Roberts Prestatyn Chwyd

Dumb androids

OK, OK but you know how hard English can be for non-humans. I mean when was the last time you talked to Tim Smith

The Android, Rhyll Chwyd

I TALK to Tim Smith every working day and I think I can safely say that Tim exhibits all the symptoms of a condition known as 'singular genius'. This is because only he knows what the hell he's talking about but he finds it so difficult to explain to himself in terms that he can clearly understand that he believes he's smarter than he thinks. Try filtering that through your mondo recursive feedback circuitry me ol' droidy chummy pal

Mole hunt

A bit obvious, innit? Much as Jeff Walker's JAM deserves the publicity, plugging it every second week in the User Group Spotlight is a wee bit OTT, no? And the weeks that JAM isn't mentioned, Steve Williams' WACCI gets the spotlight. Could it be anything to do with the long standing connection between Messrs. Pommet, Walker & Williams? I think we should be told.

Stewart C. Russell Glasgow Scotland

YES I HAD noticed that frequent bias myself. I'll get Andy Editor to sort him out for you. Any particular blunt instrument you'd like employed?

We might do

Do they mean us?
Old Holborn's column NCE132
PAGE 16:

"During an interview published in a well known UK monthly Amiga magazine"

Spotlight column NCE132 page 45:
"JAM was the brainchild of ex-Amiga Computing editor Jeff Walker..."

I checked with Jason H and he reckons in the first instance it was creative subbing that translated Amiga Computing into "...a well known..."

When we mention the excellent work NCE has done on the "Door-to-Door" scam, I don't credit - "A well known UK weekly computer news magazine"

Amiga Computing,
Macclesfield, Cheshire

Or maybe not

Hmmm... on newspapers I was taught never to mention the opposition. These days I think that's rather petty; if your mag is any good people won't suddenly defect as soon as they realise there's another available.

Barnaby Page, Ludlow. Shropshire

GOOD LORD! What am I doing? That's mentions for *ST User* and *Amiga Computing*, *JAM* and *WACCI* and even *Mr Page of PrePress* all in one issue. What more can I say other than rush out and buy all their mags right away! Honestly. Alternatively you might prefer to take all your hard earned money and throw it in the nearest canal.

Dolphin shock

Why do you feel it necessary to print photos of naked dolphins frolicking provocatively in hotel swimming pools? This is just the kind of gratuitous pornographic imagery which turns ordinary men into raging sub-aquatic bestial rapists. I, for one, am horrified.

Bill Pearson, Manchester

AN APPALLING lapse I must admit. It just goes to show how immune we've all become to crude images of the trouser arouser variety. I am at this very moment slapping myself vigorously with wet fish as penance

Mass debate

The computer world is in severe danger of disappearing up its own posterior. And for once, I am not talking about the ST v Amiga debate. This time what is really getting on my case is the Mac v PC mass-debate.

Windows Smasher was your headline. Surely not. Why do you the media have to play one perfectly good machine and O/S off against another. Windows and System 7 - not that I have used the latter - appear to be as good as each other.

I have been using a PC for some four years now, with upgrades, and I don't want a 'sexy new Mac'. The PC and MS-DOS works fine, Windows does the business, and frankly the Mac and the PC are worlds apart. All any

one really uses the Mac for his high-end DTP. The PC is used in serious business.

Basically, as a plea: don't start a 'My Mac is better than your PC'. The Mac has a lot of catching up to do in Europe, no one I have met has seen one, let alone owns one. Frankly it is best left to the arty, creative types who can get the most from it.

Sorry this is so unstructured but the more I think about it, the angrier I get.

Mark Foster, Brighton.

OK HOW ABOUT us starting an argument right here? The best thing about PCs is that they're infinitely upgradeable. Which is just as well really since 90 per cent of them are dinosaurs. Before Windows 3 you needed a degree in computer science to use one effectively and even now you need a 386SX with loadsa memory which 9 out of 10 PC owners don't own.

1st of many?

I thought your comment about Atari last week was totally over the top. Leader of the Pack was a sixties song not a litties one!

Kelly Burns, York

THANKS FOR that attention to detail there Kelly. For a moment I thought I was going to have to duck from all the flak they're taking up in editorial.

SWOT was it?

So why didn't you print all of the Atari SWOT analysis last week then - ran out of nerve did we?

John Fisher Clifton Nottingham

JUST A MISTAKE I'm told. Though I reckon we should just have run it as a full page in itself - it's not often a leading company honestly assesses its Strengths, Weaknesses, Opportunities and Threats in public.

Cooking tips

When are you going to start covering the computers that we see in everyday life without realising that they are computers?

I looked around my house last week and found several. The washing machine, microwave, oven, central heating, TV and Video all have computers in them for sure and I'm sure some of the other appliances have little logic circuits hiding inside them.

I'm sure that your review pages could benefit from say a round up of computerised cookers or micro powered microwaves.

ON THE COUCH



The first of a brand new series of psycho-analytical tips for you and your computer. All you have to do is write in with the name of your machine, your favourite software, and the machine you'd most like to own.

Our resident psychiatrist, Dr Clare Anthony, will then lay you down on her leather couch and sort you out good and proper. So write in for a free diagnosis to: *Leather Couch Clinic, New Computer Express, 30 Monmouth St, Bath BA1 2BW.*

She'll send you a fiver towards the machine of your dreams.

This week, it's Tim Fielding of Basilidon

- MACHINE OWNED:
Amstrad PC1640
- FAVOURITE SOFTWARE:
F-19 Stealth Fighter
- DESIRED MACHINE:
NCube mainframe

Well Tim, this tells me a great deal about the potentially dangerous schism between the dynamics of 'desire' and 'repression' existing within your super-ego. Your unfulfilled desires for unlimited power are mediated through a continual channeling of violence which you live via the fantasy of piloting an unparalleled weapon of war. And you know what us Freudians say about weapons don't you Tim?

Basically, you are in deep trouble, doomed to the inevitable frustration of having to find £19 million to find a degree of comfort.

DIAGNOSIS: Find yourself a well paid job - possibly as chief executive of Apple Computers. Meanwhile, lock yourself up and save money by not eating anything.

Who knows, maybe you could give away a sachet of cook-in-sauce on the cover

F. Craddock, Potters Bar.

IT'S A MESS here already without us having various kitchen items littering the place. But it might be worthwhile finding out which domestic gadget packs the most chips.

AMIGANUTS UNITED

169, DALE VALLEY ROAD, HOLLYBROOK, SOUTHAMPTON, SO1 6QX
 MON - FRI: 10am to 6pm TEL: 0703 785680
 AMIGANUTS ARE THE OFFICIAL UK DISTRIBUTORS OF THE T.BAG DISKS AND THE
 "LATEST ISSUES" ARE ALWAYS AVAILABLE FROM US FIRST "ISSUE 49"



LOOK

LOOK

AMIGANUTS ARE PROUD TO INTRODUCE THE EXCELLENT EIGHT CHANNEL MIDI COMPATIBLE OctaMED

Note that Amiganuts United hold the worldwide copyright to this program and it will not be available through any other source.

The program is of such high quality that we could easily have put it on sale for £50 or more!

However, Amiganuts and the author, Teijo Kinnunen, want it to be within the reach of all Amiga enthusiasts, so we are keeping the price down.

You can purchase this great program for only £10.00, within Europe, (£15 rest of the world). The price includes return post and packing.

Payment in pounds sterling only. If ordering from overseas, send a bankers order/Eurocheque etc. (Credit card orders will not be accepted). Because of the exceptionally low price, it comes without glossy packaging and one page of printed documentation. (Instructions on the disk)

Please note that you are advised not to purchase this program if you only have the basic half-meg, as it does hog a lot of memory.

A full instruction manual for this program may become available later, but due to the high costs involved, it will be quite expensive!

*****THE LISTING BELOW IS FROM OUR LICENCEWARE PROGRAMS ***** THEY ARE ONLY AVAILABLE FROM AMIGANUTS *****

Need a quality database program? Then Amibase Professional II may be just what you are looking for!

- 1036:** AMIBASE PROFESSIONAL II. Now available. The additions of this prog make it a must have. Includes picture facility. (1 Meg) £3.50
876: QUIZMASTER. Think you know it all? Well now you can prove it. Save and re-load facility. For 1 to 4 players. Excellent! £3.00
877: 1 ACROSS 2 DOWN. A fully fledged crossword program. It comes on two disks for only £5.00. Data disks 2 & 3 now ready, each £2.00

INTO CODING? - WANT TO LEARN? THE AMIGA CODERS CLUB IS FOR YOU! ACC 1-4 COMPRESSED ISSUES OF AN EXCELLENT SERIES FOR CODERS, EVEN IF YOU ARE NEW TO THE AMY, GET THIS IF YOU WANT TO LEARN ASSEMBLY, USING DEVPAC ETC.. A GREAT INTRODUCTION TO THE WORLD OF ASSEMBLY. ONLY £1.50

The Amiga Coders Club disks are packed with source, hints, tips, advice from many of the well known coders that are on the Amiga scene today. Issues 5, 6, 7, 8, 9, 10, 11 now available.

Please note, excluding the compressed introductory disk, Amiga Coders Club disks are £3.00 per issue.

ACC issue 12 is our birthday issue, (available 12th May), it is a 2 disk set and for the next two months you can buy both disks for £3.00!!

- 1038:** SUPER AMIDASH. Remember that good old Commodore 64 game Boulderdash? Well here is your chance to have that fun again £3.00
1068: MOD PROCESSOR V1.9. Make picture and/or music progs, adjust pic height/width. This version will load 8 Channel OctaMED music £3.50

The following is a very small selection from the Public Domain/Shareware collection that we have collated over the past five years

- MED/OctaMED SAMPLES PACK. Six disks that are packed with samples for use with this excellent music utility (note one is very rude). £8.00
 MED V3.10. Although not comparable to OctaMED, (see above), if you simply want to tinker with the keyboard it will satisfy. (1 Meg is advised) £3.00
1047: TEXTPLUS V3.0EN is here! The extra facilities on this new version are unbelievable and would take half a page to describe! £3.00
1067: UEDIT V2.6e. The very latest version of this very popular text/editor prog by Rick Stiles. The new features are very good. £3.00
263: ADAMS FAMILY. Good pics of this infamous family. 1 Meg. £1.50
287: NASA PICTURES. Good hi-res pictures of space missions. £1.50
326: POWERPACKER by Nico Francois. Excellent crunch util. £1.50
700: D-COPY V1. Excellent copier program. Full instructions £2.50
724: 6 GOOD DEMOS + a game. The Questor Cowboy anim. is good £1.50
728: UTILS. The famous Boot-Shop, Boot-Kit + others £2.50
741: NorthC V1.3 (2 disks), C Assembler etc. by Steve Hawtin. £5.00
907: SNAKES & LADDERS. Excellent game for the family. 1 Meg £2.00
1018: THINKAHEAD. A real mind boggling game from the clones. £2.00
1023: The excellent AMY versus The WALKER animation. 1 Meg £1.50
1032: AMI-FX 3. Third in this fractal series. (3 disks) 1 Meg £4.00
1040: BALLOONACY. An excellent game for the children. 1 Meg £2.00
1048: DO THE BARTMAN. A fantastic version by Freehand. 1 Meg £2.00
243: THE DEFINITIVE JARRE SHOW. Good music & pics by HCC £1.50
265: HOW I CAUGHT AND DESTROYED A VIRUS (animation). 1 Meg £1.50
300: CLASSICAL MUSIC 1. Runs nearly 50 mins. (By Rob Baxter) £1.50
398: GHOSTPOOL and SPIGOT Animations by Dr. Gandalf. 1 Meg £1.50
933: A-GENE Genealogy. The very latest V3.125. 1 Meg £2.50
939: FRAXIONS NEW MEGADEMO. "The Wall" It's good! £1.50
942: SYNERGY. Well presented sculpt 4D pictures £1.50
950: THE EVIL DEAD by Possessed. Can you kill the Zombies £1.50
967: STEREO 3D DEMOS by Exit. (Great! But needs 3D glasses). £2.00
1021: AT THE MOVIES. Animation with sound efx. 1 Meg £1.50
1034: AREXX PROGRAMMERS TUTORIAL DISK from the S.W.A.G. group £1.50
1037: GAMES. Klondike, (great version). Simon, (fun for kids) £1.50
1052: DRIFTERS DEMO. "The Prisoner" & "Six of One" are great £1.50
1061: DRAPACK. "The Cyborg" demo. It's a must have! 1 Meg. £1.50
971: THE MASTER VIRUS KILLER. It recognises and kills over 100 of the pests + other excellent features. (Includes hard drive protect) £2.50
990: AMIGA C CLUB MANUAL V2 is now ready. Loads more info, source and help from Anders Bjerin. Now Auto-Booting and on four disks. £6.00
996: THE LATEST AND EASIEST SETKEYS PROG TO RE-DEFINE YOUR KEYPADS. Plus a host of other utilities, (Icon design, Iconlab, Clipit etc.) £2.00
1026: STAR TREK MEGADEMO. Another well presented two disk set from Tobias Richter, combining pictures, animation and music. 1 Meg £3.00
1031: GAME COMPILATION. Spacepoker, a good version of the Poker-Bandit. Plus Running and Snakepit, both with full game editing. £2.00

Free disks + free progs + free membership - Over a thousand detailed progs plus some games to play, on the main catalogue disk.. only £1.00
 Main catalogue disk sent "FREE" with orders above £15.00 - please remember to ask for your free copy if you send in an order above £15.00

Prices quoted include return post and packing - make cheques etc, payable to: Amiganuts United - (we do not accept credit card orders).

The third 1991 update to our main catalogue is now ready for £1.00 (The update contains only the LATEST additions to the library)

(NOTE! After it's initial purchase, the 1991 updated catalogue will be re-copied, free! if you return it with an order for £15 or more)

AMIGA

- Embrace Mac power with the new A-Max II Plus
- Alternative Image take on Real 3D for ray tracing
- Shock horror! The best Amiga PD demos at last

A-MAX 2 PLUS SOON

It's been almost time coming, but ReadySoft's 'Mac on a card' emulator, A-Max II Plus, is almost here. According to UK distributor Entertainment International, the card should be available some time during June/July at a retail price of about £400.

For those of you who have been on Mars for the last few months, A-Max II Plus is a plugin card for the Amiga 2000 upwards that adds the power of an Apple Macintosh to the Amiga. With its built-in AppleTalk connectors, MIDI compatibility and support for direct reading and writing of Mac-format diskettes with standard Amiga drives, A-Max II Plus promises to be a one-stop solution for anyone needing compatibility with the Mac. You can now connect your Amiga to AppleTalk networks and peripherals during Macintosh emulation without the need for a separate (and expensive) AppleTalk card. Mac MIDI sequencers such as Performer, Vision and Cubase can be used without having to invest in a £200 Mac MIDI interface (everything is expensive on the Mac).

You can expect a full review of A-

Mac II Plus in a future issue of Express. You can find out more in the meantime by phoning EI on 0268 541212.

LIFE IN THE FAST LANE

I recently received a letter from Mr G. Baxter of Ipswich concerning ICD's recently released ADSPeed accelerator card. Mr G. wants to buy the card to install inside his 3 Mbyte A500 but he has found information a little thin on the ground. Well Mr. Baxter, I'd love to tell you all about ADSPeed, but Silica Systems have still to send me a review model (although they have promised to send it to me on many occasions).

Last week I got the chance to fiddle around with one and I wasn't that impressed. In my opinion, the increase in speed that ADSPeed delivers is just not significant enough to justify its £200 price tag. Personally I'd save up and treat myself to a real processor accelerator like those produced by Solid State Leisure. For an extra £95 you can buy the B5000-16, which is a 68020-based 16MHz card. It comes complete with a megabyte of 32-bit RAM with provision for a further 3 Mbytes.

You can expect a full review of the B5000 in a future issue of Express but in the meantime, Solid State are on the other end of 0933 650677.

ALTERNATIVE'S REAL 3D

Following the successful launch of Active International's Real 3D ray tracing system, Alternative Image of Leicester have announced that they have taken on distribution of the new 1.3 version in the UK. The original release was impressive enough, but this latest one boasts features which further enhance what is generally regarded as one of the premier Amiga ray tracing systems.

These include power texture mapping with 8 levels of anti-aliasing, advanced surface mapping tools including bump mapping and clipmapping and full support for both IFF24 and Targa format 24-bit images. Real 3D is available in both a beginner's version and a Turbo/Pro version. The beginner's version costs a mere £142 while the pro version will cost you slightly more - £409, to be precise.

If all this talk of ray tracing has tickled your fancy, then give Alternative a bell on 0533 440041.

MED BUGS BUSTED

Those awfully nice people at Amiga Nuts United would like you to know that an updated version of Tejo Kinnunen's acclaimed MED music composer is now available. According to Ray Burt Frost of AmigaNuts, a couple of small bugs were found in versions 3.0 and 3.10 of MED, but these have now been fixed in version

3.11b. Also available from AmigaNuts is a new version of the excellent MOD Processor program which allows you to play tunes from just about any Sound Tracker clone from the Workbench. Version 1.9 supports both MED 3 and OctaMed 8-channel tunes.

For puzzle fanatics, Mark Meany's Words 2 could be for you. It's a powerful anagram/puzzling solving utility that can make short work of word puzzles games. For more, contact AmigaNuts on 0703 785680.

A DEATH IN THE FAMILY

I'm in a state of mourning at the moment - my beloved Amiga 2000 has curled up its toes and kicked the bucket. During the few months that we spent together it had served me well, but alas the strain of all that review hardware was too much for it to bear. And one faithful day (last Sunday, to be precise) it happened - a series of gurus followed by a rather daunting blank screen announced that my Amiga was no more.

Thankfully, my beloved machine was still under guarantee, so it seemed that help was only a phone call away. I had heard many horror stories concerning Commodore's National Repair Centre, so my expectations were far from favourable. But, after a quick phone call, I was surprised not only by how helpful the nice people at the NRC were, but the extent of the service. Most companies I have previously encountered have required you to send the faulty equipment back to them at your own expense, but Commodore arranged for

FREE C Compiler and Programs Disk!
with every copy of the latest book from Bruce Smith Books

Mastering Amiga C

by Paul Overaa - The complete beginners guide.

If you want to learn C from scratch but have never been able to afford to purchase a C compiler then this amazing offer is for you! For just £19.95 we'll send you Mastering Amiga C plus - totally free of charge - the Charityware C Compiler NorthC and the Mastering Amiga C Programs Disk!

Containing 320 large-format pages Mastering Amiga C is applicable to all major releases of C and is specific to learning C on the Amiga. It assumes no prior knowledge of C and contains many easy to follow tutorials. Mastering Amiga C will be available in the first half of May - no cheques or credit cards will be cashed or debited until the book is dispatched. Order today to avoid delay!

Mastering AmigaDOS - Volumes 1 & 2

The acclaimed two volume set that covers versions 1.2, 1.3, 1.3.2 and 2 of AmigaDOS co-authored by AS Consultant Editor and industry guru Mark Smiddy along with Bruce Smith.

Vol. 1: A complete introductory tutorial on AmigaDOS. 368 pages for just £21.95 including a free Utilities Disk when ordered direct. Amiga Shopper said: "...one of the most comprehensive and lucid books available on AmigaDOS" - Cliff Ramshaw and Jeff Walker.

Vol. 2: A complete reference guide to all commands. 320 pages for just £17.95. AmigaBASE said: "You won't find a better guide to, or a more useful book on the Amiga than this - unless it turns out to be Volume 1" - John Walker.

Ordering: Send cheques/POs made payable to 'Bruce Smith Books' to: Bruce Smith Books, FREEPOST 242, PO Box 382, St. Albans, Herts, AL2 3BR. Phone your Access/Visa number & expiry date to (0727)-41243 (24 hrs). All books dispatched same day where possible. Postage free in UK. Add £5 for overseas airmail orders.

NEW AGE COMPUTING

AMIGA 500 Special offer!

Buy an Amiga from us, and we'll throw in the usual Screen Gems pack (with 1 meg RAM of course), mouse mat, disk cleaner and ALL our Professional Public Domain disks - plus, so that setting it up is as quick and easy as possible, access to our special support number!

All for just £379.00 + £5 48hr delivery.

Computer LYNX - The Amiga Disk Magazine

Latest issue (24) with: Working demos of Digita application software, Kickstart 2 feature (as never written before), Shaun "Super Cars" Southern interview & so much more!

Exclusive from NEW AGE only £2.00 Inc P&P

Naksha Mice	£23.00	Naksha +Op. Stealth	£26.00
Vinyl Mouse Pads	£1.99	Foam Mouse Mats	£2.99
3.5" Disk Cleaners	£1.99	3.5" labels (1000)	£7.00
40 Cap 3.5" box	£4.50	80 Cap 3.5" box	£5.50
150 capacity POSSO disk drawers	JUST £17.00		
Universal printer stand (fits ANY printer)	£6.99		
Monitor Plinths (supports monitor above A500)	£29.99		
A500 Dust Covers (other models available)	£4.50		
0.5 Meg memory expansions (with clock)	£26.99		
Mountain Breeze Computer Ionisers (cleans air)	£25.00		
DS/DD bulk disks (with labels)	from 30p ea.		
Disks as above PRE-FORMATTED from 35p ea.			
A590 memory chips 1MByte	£30.00	2MByte	£56.00
External SLIMLINE 3.5" disk drives	£65.00		

Add £1.50 to orders under £10 P&P. £2.00 on orders above.
Payments to "NEW AGE COMPUTING" - Prices include VAT

DEPT NCE 187 PERRYSFIELD RD, CHESHUNT,
HERTS, EN8 0TL

TEL: (0992) 465366. Fax: (0992) 450 009

the faulty machine to be picked up from my home within a matter of days. Next, I was expecting a long wait before being reunited with my machine, but the nice woman at the NRC promised me that my beloved Amiga would be with me again in under two weeks.

In the meantime, I've been forced

to go back to my trusty old Amiga A1000, a machine which I have owned for over five years now. Everyone seems to slag it off, but one thing is for sure - it's the most reliable Amiga Commodore ever built!

Jason Holborn

PICK OF THE PD DEMOS

Some said it would never happen, but here it is - the Express guide to everything that is good in the world of Amiga demos. Don't forget, all these demos (and more) are available from Seventeen Bit (0924366982) software for just 89p per disk.

GOLDFIRE MUSIC (1020A/1020B) - Yet another two disk music set with some very impressive tunes to pump through your



• Find out what Amy does with that can-opener in the Amy Vs Walker demo.

stereo. In particular, 'Middle East Mix' is rather fun, featuring samples from news reports of the recent War in the Gulf. Hear Saddam get wicked!

AMY VS WALKER (1022) - Amy the Squirrel returns in this latest DPaint animation inspired by the famous 'Walker Demo'. I won't say too much about it, suffice to say that if you're after a giggle, then it's worth checking out.

GLOBAL TRASH (1026) - The Keftrens return with one of their greatest demos yet, featuring some of the most spectacular graphic effects yet seen on the Amiga including RGB Plasma, ray traced 3D objects and some very fast and complex vector objects. All this backed up by a great tune.

THE WALL (1027) - Definitely one of the best demos yet produced for the Amiga. This six disk demo (yes, six disks!) is based around Pink Floyd's classic 'The Wall'. The entire demo is entirely anti-war, with each new scene demonstrating the futility and horror of modern warfare.

ST

- What do those new plans at Atari really imply?
- Shareware becomes big business - is it a shame?
- Spectre GCR Mac-emulator upgrade races in

STE PRICE CUT

You'll have already read about the price cut on the 520 STE and the new marketing position of Atari, but how will this affect all you lot, who've already bought an ST, thank you very much. Well for a start, if Atari gets its marketing plans right, then loads of people will rush out and purchase the only 16 bit machine worth having. This will mean in turn, that the perception of the ST, both on a commercial and a public level will change.

No doubt you'll have heard disparaging comments thrown about by some other computer owners which has led to mutterings that a certain software house is going to stop supporting the ST. The ST's user base is already easily a match for the competition and soon the software houses will cotton on to this and you'll start seeing more games and business programs appearing. It's a simple equation, but it's easily overlooked; the more people that buy the ST, the better it is for existing owners.

Atari has designed an excellent upgrade path; the 520 STE Discovery Xtra pack is a good start point. Then, if you want more power, you can upgrade

the memory or the speed on to a 1040 STE. The Mega STE is the next powerful step up the ladder. With this machine you get a computer that can switch between 8 and 16 Megahertz. This means you can retain compatibility with all your existing software, yet still enjoy the increased processing power.

With the right marketing the Mega STE could be the next big thing. There are mutterings that Atari might produce a Mega STE education pack along the lines of the Family Curriculum pack, enabling schools to purchase a very fast computer, with an intuitive front end and a wealth of decent software.

There are great plans afoot for the Mega STE. Atari has confirmed the existence of its STT add-on transputer board. The speed and processing power of this hardware is simply mind boggling. With the standard configuration you could run software at up to 40 MIPs (millions of instructions a second), which isn't bad when you consider that at present it runs at about half an MIP. And at a projected price of about £500, Atari is giving home computer users the opportunity to sample real computing power.



Your computer is
the only teacher
which YOU CONTROL!

Whatever your age, whatever your subject
- let your computer help you learn.

Subjects include ...

French, German, Spanish, Italian, English
History, Geography, Science, General Knowledge,
Football, First Aid, Sport, England, Scotland,
Natural History, Junior Spelling and Arithmetic

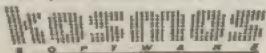
Available for most popular
home & business computers



Kosmos are specialist producers of Educational
Software designed to help you enjoy learning from your
computer. Our programs even allow you to add your
own lesson material.

Write or telephone for a FREE 20-page BROCHURE
of our Educational & Leisure software
Please state your computer type

Kosmos Software Ltd, FREEPOST (no stamp needed)
DUNSTABLE, Beds. LU5 6BR
Telephone 05255 3942 or 5406



1.99 NEW-WAVE 1.99
G.I.R.L.S Software G.I.R.L.S
are proud to present

3 1/2" & 5 1/4" G.I.R.L.S

Great
Inventive
Relatively
Lameproof
Software

We supply amazing G.I.R.L.S on all machines, G.I.R.L.S to amaze and astound you, G.I.R.L.S packed to the brim with new and exciting treats, our G.I.R.L.S have no viruses, our G.I.R.L.S will bring you hours of enjoyment. On a more serious side, we have thousands of disks in stock, from utilities to the above review, just drop us a line and our G.I.R.L.S speak for ourselves.

**B.L.O.N.D.E.S
10 FOR
£7**

Blank
Labeled
Original
New
Diskettes

WANTED
Coders, Graphics Artists, and Beat
Boys, for our own demo group
NO LAMERS

**DON'T FORGET YOU'LL ALWAYS BE
SATISFIED BY OUR G.I.R.L.S**



Send now for our free cat-disk and we
apologise for anybody who has not yet
received it, we just never believed the
response!!

**NEW-WAVE SOFTWARE, PO Box 199
Manchester M1 1JE**

Tel: 061 839 5378 Fax: 061 839 5379

BBS: 061 839 5381

Orders outside UK, send for details.

One thing puzzles me though. Atari has put the price of the Mega STE up by £100. This was explained to me by Peter Staddon, Atari's marketing manager, who said that they were being screwed about by the dollar/pound exchange rate. But Atari is touting the Mega STE as a Mac basher, and when you can pick up a Mac Classic, with hard drive and a couple of megabytes of RAM for £650, their argument is severely weakened. Alright, so the ST software is arguably better than Mac software, but there's a completely different perception of the Mac as a business solution. Atari has got to alter the public perception of the ST. Until people start talking about the Mac and the ST in the same sentence, things won't change.

SELLING SHAREWARE

The public domain scene has changed beyond all recognition over the last year. It used to be the case that there were five or six public domain libraries, dealing with fairly small numbers of punters and small profit margins. However, as PD has taken off, so has the 'Men in suits' perception of the market.

This point has been rammed home by the arrival of a new shareware company called Akore. These guys are dealing with massive advertising budgets and probably, massive profit margins.

The company's catalogue is a very professional-looking affair with a cover price of £1. It includes a large number of programs previously unseen in this country, and where familiar programs

are included, it's only the decent stuff. There are no demos, the company operates a charge-free credit card hotline and claims to have a very quick turn around rate.

Companies like this will undoubtedly force many of the amateur operations out of business. If too many companies have to drop out of the market, then people like Akore Shareware can start pushing the price of their disks up, thereby negating the whole point of public domain. Akore Shareware lives at Freepost Akore, Nottingham, NG1 1BR, telephone, 0800 252221.

INSPECT A SPECTRE

Spectre GCR is an excellent Mac emulator which runs on all STs. It can emulate a Mac faster than the Mac runs itself. Well the guys at Gadgets have just come up with version 3, and the improvements are great.

For a start, they've included a turbo SCSI option. This means you can push your hard drive to new limits. All the old incompatibility problems have been dealt with. Disks now eject far quicker, the Mac Plus's numeric keypad is supported, and you can now simply pull down and print to a laser printer. If you use a Mac at work, and would like to bring your WP files home, then Spectre is an excellent option.

Spectre GCR is available from all main dealers, though I recommend Ladbroke Computing on 0772 203166.

Andy Hutchinson

PC

- DOS 5 hidden feature wows LAN experts
- Geoworks ensemble for Postscript
- Harvard and Lotus for Windows

DOS 5'S LITTLE SECRET

According to sources close to the company, Microsoft's long-awaited DOS 5.0 is due for release in mid-June. Reports say that it will be available through retail outlets as an upgrade. Incidentally this particular version of DOS will be the first to carry the Microsoft name. Apparently DOS 5.0 will cost in the region of £60.00 although no confirmation was given by Microsoft.

Those system users who run a LAN network may be interested to hear of a little known feature lurking in the bowels of DOS 5.0. Apparently, the new DOS version will allow LAN users to update to the new version over the network. This has been hailed with cheers by LAN experts because it will help maintain configuration consistency on networked PCs. Microsoft had no comment on this new feature. Contact Microsoft on 0734 500741.

NEW GRAPHICS FOR DOS

Harvard Graphics 3.0 for DOS and Harvard Graphics for Windows are the headlines from stateside outfit, Software Publishing Corp. The DOS ver-

sion is expected to ship this month, while the Windows offering won't be ready until the end of the year, according to sources briefed on the company's plans.

Over the other side of the tracks is Lotus Development Corp. Lotus has just shipped Freelance Graphics for DOS, Version 4.0. In addition, there are rumours that Lotus plan to arrange a preview of Freelance Graphics for Windows in the near future. The likely appearance of Freelance for Windows 3.0 is around September/October.

INTEGRATION'S HERE

Spinnaker Software Corp. is expected to unveil PFS:WindowWorks, one of the first integrated packages for Windows 3.0, in the near future. Based on Spinnaker's DOS integrated package, PFS:WindowWorks has eight modules, and data can be shared between the modules by creating hot links.

The program includes a word processor with page-layout facilities, a spreadsheet, a dBase-compatible flat-file database with report and mail-merge facilities and a charting module. It also

Some offers you can't refuse...

Portables (Prices exclude VAT at 17.5%)

Toshiba 2000SX 386SX Notebook 40Mb	£1950
Amstrad ALT 286 with FREE Canon BJ10e	£1475
Amstrad ALT 386SX with FREE Canon BJ10e	£1835
Cambridge 288 Computer only	£189
Cambridge 288 Pack in carry case	£235
Cambridge 288 PC Pack in carry case	£256
Cambridge 288 Mac Pack in carry case	£282
Pison MC200 Mobile Computer	£449
Pison MC400 Mobile Computer	£629
Pison MC600 PC Compatible	£1110
Pison Organiser Full range available from	£59
Alari Portfolio Pocket PC	£159
Microwriter Agenda 32K	£129
The Pocket PC (full range available) from	£825

Desktop PC (Prices exclude VAT at 17.5%)

SafeDATA 286-12 1Mb, VGA Colour	£699
40Mb HDD	
SafeDATA 386SX20 2Mb, VGA Colour	£899
40Mb HDD	

Full range of SafeDATA machines available 286 to 486.

Amstrad 386SDX + 3160 Printer + Software, Mono

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Amstrad 386SDX + 3160 Printer + Software, Colour

Printers (Prices include VAT)

This is just a selection, all other models are available

Mannequin-Tally

MT85 9pin B00al 180/45cps Friction/Tractor

MT98 Bubblejet 200cps, s/f, Desktop Em.

12 fonts

MT7400 4096 colour page printer HP II Em.

300dpi

MT904 4ppm Laser Ljlp Em. 512K

2nd bin option

MT92C Colour Bubblejet, Plain paper, 300dpi

Kyocera

F800T 8ppm Laser 79 fonts, compact

desktop

F820 Twin bin version

F5000 A3/A4 Laser

F3300 18ppm Laser 1Mb RAM, 79 fonts

Panasonic

1124: NEW 24pin, faster, more fonts, LQ850

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

Em.

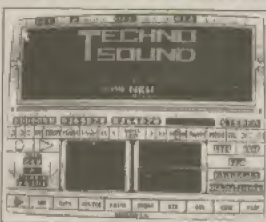
Em.

Em.

Em.

Why buy an ordinary sound sampler
- when you can buy a recording studio?

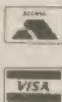
TECHNOSOUND Turbo SOUND SAMPLING SYSTEM FOR THE AMIGA



- ★ SONG SEQUENCER
- ★ MIDI SEQUENCER
- ★ VARIABLE DIGITAL DELAY
- ★ VARIABLE CUT BUFFER
- ★ FULL MULTITASKING
- ★ 57 RECORDED SAMPLES

- ★ STATE OF THE ART TRUE STEREO CARTRIDGE
- ★ OVER 100 INTERACTIVE FUNCTIONS
- ★ SIMPLE TO USE TUTORIAL AND USER GUIDE
- ★ STUNNING REAL TIME EFFECTS INCLUDE: Echo - Reverb - Hall - Voice Synthesis - Phaser and Vibrato.
- ★ EXTENSIVE EDITING AND LOOPING FACILITIES

**UPGRADE AVAILABLE
TO EXISTING USERS
FOR ONLY
£6.00 + £1.00 P&P**



**NEW
DIMENSIONS**

BROOKLANDS HOUSE
BRYNGWYN, RAGLAN
GWENT NP23 2AA
0291-690933/690901

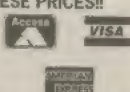
£35.99

+ £1.50 POST AND PACKING



Once Bytten

39 Marling Way, Gravesend,
Kent, DA12 4DW.
Tel: 0474 587964. Fax 0474 537172



features a database for addresses and a Hayes-compatible communication package. A probable release is expected around June/July.

FALCON UPGRADE?

Rumours abound that American owners of Falcon will be eligible for an upgrade to Falcon 3.0, the new and very impressive flight simulation from Spectrum Holobyte/Mirrorsoft, on production of the relevant proof of purchase. Will Mirrorsoft offer similar upgrade arrangements? Give 'em a call and find out.

It appears that Spectrum Holobyte is, at this moment, working on a utility

to allow Falcon 3.0 to run smoothly over a Novell network system allowing exciting multi-player options. I'll give you confirmation on this one when I get it. Contact - Mirrorsoft on 071 928 1454.

GEOWORKS ENSEMBLE

GeoWorks is expected to announce the latest version of their Ensemble Version 1.2. Specifically, the latest version adds PostScript printer drivers and a spelling checker. In addition, GeoWorks is reported to be developing a major upgrade which is hoped to be released later in the year.

Paul Rigby

NEW SERIES! - SPECIALIST SHAREWARE

This week sees the beginning of a series of news/preview items that looks at shareware and PD for specialist usage. This week? Why, it's DTP time!

Ask your local shareware vendor for a copy of Desktop Paint 256 version 1, a VGA paint program. A high resolution (pixel level) VGA paint program, Desktop Paint runs from DOS. Okay, it's a little clunky compared to GEM or Win3, but this is shareware. The interface and tools work very well. Perfect for the occasional bitmap that needs some retouching. Intriguingly this program requires Super VGA as well as a mouse. It also supports Paradise + and Pro, ATI VGA Wonder, and Headland

Video 7 or 1024i graphic boards.

Next is Alphaquote v 2.3, a program for estimating DTP and typesetting. It's useful for determining how much graphic products should sell for and great for comparing the price differences between DTP and traditional typesetting. This new version contains bug fixes to v2.2 and can use multiple rates (setup files). It is menu driven, has a graphic arts calculator, can offer disk or printed estimates, preview, online help and complete documentation. Contact: PD & Shareware Library, Winscombe House, Beacon Road, Crowborough, E Sussex, TN6 1UL. Tel: 0892 663298

ARCHIMIDES

- Spring Computer Shopper show roundup
- Two new A3000 add-on releases from Pres
- EasiWriter word processing package unveiled

SHOW REPORT

It seemed that much of the crowd at the Spring Computer Shopper show held at Alexandra Palace had mistaken it for an All Formats affair, and were still in shock after shelling out six quid to get in. Thirteen year olds do not want to attend seminars on application architecture, or study Taiwanese VGA cards. They want Atari. They want turtles. They want Amiga. They weren't there.

However, Minerva, Pres, Fourth Dimension and the Serial Port were, providing almost the only relief from wall-to-wall PCs. Minerva had nothing new, but was doing a brisk trade in old IRIX the Viking games. The Fourth Dimension was showing many of the games talked about in these pages (Saloon Cars, Chocks Away Extra Missions...) but not actually selling them yet. Its advertising seems to have got about four months ahead of the real release schedule for these games.

The Serial Port and QD Enterprises shared a stand to plug items like their new sound sampler, a new MIDI board and the Graphics Enhancer. These deserve more space than I've got this

week, so I'll leave them for now.

DUAL PODULES

Pres had taken a sizeable stand, and had two new items to be proud of. The first, for A3000 owners, sounds rather prosaic: a dual podule box. Normal podules are attached, one at a time, to the A3000 via the rear connector, and protected by a podule box. Racking systems and podule housings from Watford and Wild Vision allow several podules to be connected but with a manual switch to select one or another. For example, you could add a scanner and hard disk card to the Wild Vision housing: scan in a sprite and you can't save it because the hard disk podule has to be switched off. Pres has overcome this by clipping an extra connection to the podule select circuit inside the A3000. It does the same job as inside a 400-series Arc, and allows you to use two normal podules at the same time.

The Missing Link was also on show and is being marketed as a (very) fast link between two Archimedes. It's a tiny board that plugs into the Econet board

SUPER SUMMER SAVERS FROM BCS

AMAZING DEALS **LOWEST PRICES**

Bulk buyers 2 for 1 disk guarantee

50 3.5 DS/DD	£21.75
100 3.5 DS/DD	£33.50
150 3.5 DS/DD	£49.00
200 3.5 DS/DD	£62.00
400 3.5 DS/DD	£124.00
500 3.5 DS/DD	£139.00

Price inc. VAT & p&p

3 1/2 DS/DD

Disks & boxes 2 for 1 disk guarantee

50 disks + 80 cap box	£24.50
100 disks + 80 cap box	£37.25
150 disks + 80 cap box	£52.00
200 disks + 2 x 80 boxes	£66.00
400 disks + 4 x 80 boxes	£139.00
500 disks + 5 x 80 boxes	£155.50

Price inc. VAT & p&p

5 1/4 Cap Box £5.10
100 Cap Box £5.90

3 1/4 Cap Box £4.10
2 80 Cap Box £4.50

3 1/4 DS/DD £6.00

20 Sony branded + box 3 1/2 DS/DD £16

Philips CMR833 MKII Monitor £214
Now in stock

STAR LC-200 Colour Printer £210
Now in stock

100 Sony Bulk inc. VAT & P&P £41.50

100 5 1/4 DS/DD + 100 box £28.50 inc. VAT & p&p

Sony bulk 40p

Add £3.65 P&P, Add £4.00 for 3 day delivery, add £8.00 2 day, £10.00 next day (from despatch)
Cheques will be held for clearance

AMIGAS

Amiga 500	£305
Screen Gen II	£395
Amiga 1500	£850
Amiga 1500 + monitor	£895
Glass of the 30's	£510
First Steps	£510
Cumulus drive	£265
Mag no clock	£31
Mag + clock	£35.90

ACCESSORIES

Mouse mat	£2.75
Zonit	£11.50
Airfighter	£12.50
US Turbo II	£9.50
Cherish 125	£8
1000 labels	£8
Printer lead	£8.50
Rackmount mouse	£28
Dust cover	£5.50

ATARIS

STE Discovery Pack	£265
Family Curriculum Pack	£365
Turbo Pack	£349
Sega now in stock	
Ext drive	£72
Dust cover	£5

Trade/Government/School orders welcome

Call or send cheques/Postal Orders to
BCS LTD, 349 Ditchling Road, Brighton
E.Sussex BN1 6JJ

Tel 0273 506269 or 0831 279084



PBT ELECTRONICS LIMITED

PORT TALBOT WORKSHOPS, Unit 17,
Addison Road, Port Talbot SA12 6HZ
TEL: 0639 885008 FAX: 0639 887170

SAM COUPE computer + 1 drive	£199.99	Citizen 180E printer	£169.99
SAM COUPE computer + 2 drives	£275.99	UHF leads TV to computer (BBC/Spectrum)	£1.99
SAM disk drive	£79.99	SAM Scart cables (connects to monitor)	£9.99
SAM 256K RAM expansion	£39.95	SAM Scart cable for Microvitec cub monitor	£9.99
SAM COMMS interface	£29.95	SAM dual joystick adaptor (connects 2 joysticks)	£7.99
SAM disk interface	£29.95	SAM Midi cables	£6.49
VOICE BOX allows SAM to speak	£39.99	3.5" DS/DD disk box of 10	£5.99
SAM COUPE computer pack (512K + drive)	£234.99	Plus D/BBC dual disk drive connectors	£14.99
SAM advanced technical manual	£15.99	Spectrum 48K power supplies	£9.99
Citizen 120D printer parallel	£140.99	Spectrum 128K power supplies	£14.99
Mannesman MTB parallel printer	£135.99	A4 printer paper 2000 sheets	£19.99
Parallel printer cable SAM/BBC/+D type	£7.99		
Parallel printer cable Spectrum +3 type	£7.99		

For full price list of other products please ring.

All prices include VAT - Postage Printers/Computers £5.00. Postage all other products £1.00

SPECIAL FOR ALL FORMAT SHOW

Citizen Swift 9 colour printer	£195.50
3.5" disks	£3.50 for 10
Colour Dump utility for SAM COUPE	£7.99

Disk boxes lockable

40 disk size	£4.50
80 disk size	£6.50

Also at show:

Blue Alpha's SAM sound sample and Voice Box interfaces for the SAM COUPE at special show prices

MGT DISK DRIVES AND PLUS 'D' INTERFACES REPAIRED.
3 MONTHS GUARANTEE GIVEN ON REPAIRS.

Please telephone before sending repairs anytime until 8pm

BEST PRICES MAIL ORDER - 0903 700714 - 10.00AM TO 12 MIDNIGHT
PHONE US NOW FOR THE BEST PRICES, THE BEST SERVICE AND THE BEST SUPPORT.

ATARI

ST Accessories

SMI24 Mono Monitor	£109.99
Megafile 30 Hard Disk	£399.00
Megafile 60 Hard Disk	£529.95
External 3.5" Disk Drive	£69.00
Golden Image Hand Scanner	£199.00
Forget-Me-Not Clock 1	£19.95
ST Monitor Switch Box	£14.95
ST Stereo scart lead	£12.99
STFM scart lead	£12.99
STE Stereo MKII 8833 lead	£12.99
STFM MKII 8833 lead	£12.99
Joystick/Mouse extension lead	£4.99
Replacement Mouse lead	£3.95
Standard Parallel lead	£5.95
Internal PSU for STFM/E	£100.00
Replacement ST keyboard	£100.00
Mouse Mat	£3.50
2 x Midi cables	£6.99
14 pin din plug (ST disk drive)	£2.30
14 pin din socket (ST disk drive)	£3.00
13 pin din plug (ST monitor)	£2.00

Hard Drives

* NEW * NEW *

We are now official stockists of the latest in high quality / low price ST hard disk drives from Protar. All Protar hard disk drives come with a full 12 month REPLACEMENT warranty (no lengthy repairs!), a DMA through port, device number switching and Protar hard disk drives are the only manufacturer who provide the ATARI COMPATIBILITY seal of approval.

* PHONE NOW *

Phone us today for prices. Hard disk sizes ranging from 20MB to 440MB including removable tape streamers.

ST Ram Kits

DIY 1 - 512k upgrade	£29.99
DIY 2 - 2mb upgrade	£89.00
DIY 4 - 4mb upgrade	£159.00

All STE Ram Kits come with instructions and DO NOT require soldering in most machines.

ST Software Packs

For contents of the ST software packs - see the listing of ST computer ranges on the opposite page or phone us for details.

Discovery 1 Pack Software	£16.99
Discovery 2 Pack Software	£16.99
Extra Pack Software	£39.99
Tenstar Pack Software	£29.95
Power Pack Software	£34.99
Curriculum Pack Software	£39.95

ST Midi Software

Gaits Sequencer One	RING
DCT Tiger Cub	RING
C-Lab * ALL PACKAGES *	RING
Steinberg * ALL PACKAGES *	RING

TT

The amazing 32Mhz TT030 is now available in the following configurations:

2mb ram, 40mb h/disk	£1699.99
4mb ram, 40mb h/disk	£1999.99
8mb ram, 40mb h/disk	£2199.99
Hi res colour monitor	£440.00
19" Hi res mono monitor	RING

Mice

Conriver 5-in-1	£21.00
Conriver Trackball	£29.99
Golden Image Optical	£RING
Logitech ST	£29.95

PRINTERS

ACCESSORIES & RIBBONS

All of our printers come with a parallel cable to suit Atari ST, Amiga and all standard PC etc (other cables available at extra cost - ask for details). All printers carry a full 12 months warranty. We only sell genuine UK stock - we do not offer inferior 'grey imports'.

CITIZEN

* 2 YEAR WARRANTY *

SPECIAL OFFER! All Citizen Swift 924 and 24X printers come with a FREE colour kit and colour ribbon until the end of May 1991.
SPECIAL OFFER! For a limited period only we are offering a CITIZEN PRINTER STARTER PACK with all Citizen printers. The pack comprises of: 3.5" disk full of printer drivers for the ST Amiga & PC; 200 sheets of fanfold tractor feed paper; 200 fanfold tractor feed address labels; 5 tractor feed envelopes all for only £12.99 on top of the price of the printer



Citizen 120D + (9-pin)	£139.00
Citizen Swift 9 (9-pin) *FREE COLOUR KIT*	£199.00
Citizen 124D (24-pin)	£209.00
Citizen Swift 24 (24-pin) *FREE COLOUR KIT*	£299.00
Citizen Swift 24X (15" 24-pin) *FREE COLOUR KIT*	£399.00

CITIZEN RIBBONS

120D / Swift 9 Black Ribbon	£4.50
124D / Swift 24 Black Ribbon	£4.50
Swift 9 / Swift 24 Colour Ribbon	£16.00
Swift 24X Black Ribbon	£7.50
Swift 24X Colour Ribbon	£18.00

CITIZEN ACCESSORIES

124D / Swift 9 & 24 Semi Auto S/Feeder	£39.99
124D / Swift 9 & 24 Automatic S/Feeder	£79.99
Swift 9 & Swift 24 Colour Kit	£34.99
Swift 24X Colour Kit	£39.99
Swift 24 Font Cards (6 different) each	£35.00

Star

TELESALES (0903) 700714
10.00AM TO 12 MIDNIGHT
MONDAY TO SATURDAY

Star LC10 Mono (9-pin)	£155.00
Star LC200 Colour (9-pin)	£220.00
Star LC24-10 Mono (24-pin)	£215.00
Star LC24-200 Mono (24-pin)	£260.00
Star LC24-200 Colour (24-pin)	£295.00
Star XB24-10 Mono (24-pin)	£475.00
Star XB24-15 Mono 15" (24-pin)	£600.00

STAR RIBBONS

Star LC10 Black Ribbon	£3.50
Star LC10 Colour Ribbon	£5.20
Star LC200 Black Ribbon	£5.00
Star LC200 Colour Ribbon	£10.00
Star LC24-10 Black Ribbon	£4.75
Star LC24-200 Black Ribbon	£7.50
Star LC24-200 Colour Ribbon	£11.00

Other Printers

Canon BJ10E Portable Bubble Jet	£289.00
Hewlett Packard Desk Jet 500	£459.00
Panasonic KXP 1124i (24-pin)	£279.00

ACCESSORIES

Canon BJ10E Sheet Feeder	£59.99
HP Desk Jet Epson FX Emulation Card	£59.99

RIBBONS / INK

Canon BJ10E Ink Cartridge	£19.99
HP Desk Jet Ink Cartridge	£14.99
Panasonic KXP 1124i Ribbon	£9.00

LASER PRINTERS & PLOTTERS AVAILABLE
ON REQUEST - PLEASE RING US WITH
YOUR REQUIREMENTS

AMIGA

Accessories

512K Ram upgrade with clock	£29.99
A590 20Mb Hard Disk	£284.95
External 3.5" Disk Drive	£65.00
Golden Image Hand Scanner	£199.00
Amiga Stereo scart lead	£12.99
Amiga Stereo MKII 8833 lead	£12.99
Standard Parallel lead	£5.95
Mouse Mat	£3.50
2 x Midi cables	£6.99

Software

Mastersound Sampler	£36.95
Deluxe Paint version 3	£64.95
Vidi Amiga video digitizing	£99.99
Astra Software Pack	£29.95

8833

MKII

Colour Monitor

The Philips 8833 MkII is the perfect colour monitor for ST and Amiga owners. With its stereo sound and super quality picture it really shows off the full capabilities of the STE and the Amiga. The Philips 8833 MkII also comes with 12 months on site warranty FREE!

8833 with STFM cable	£249.99
8833 with STE cable	£249.99
8833 with Amiga cable	£249.99

LYNX

Games Console

The Atari Lynx is a superb full colour hand held games console using plug-in cartridge games. The Lynx can be used with either batteries or a mains power supply unit. All our Lynx machines come with instructions and mains power supply unit.

Lynx Console	£95.00
Lynx Console (with free California Games cartridge)	£117.50
Carrying Case	£14.99
Carrying Pouch	£11.99
Car Power Adapter	£9.50
Sun Visor/Scratch Shield	£6.99
Mains Power Supply	£14.99

ALL GAMES £19.99 EACH:

Blue Lightning	California Games
Chips Challenge	Electrocop
Gates of Zendeocor	Gauntlet II
Klax	Mega Man
Paper Boy	Rampage
Road Blasters	Robo Squash
Rygar	Shanghai
Slime World	Xenophobe
Zarlor Mercenary	

ZYFI

Stereo Speakers

ZYFI amplified stereo speakers are suitable for the ST, E, AMIGA & SEGA MEGADRIVE. They come with a power supply and offer all range stereo sound for only £37.50 including VAT + delivery

ATARI STE PACKS

WE ARE PROUD TO ANNOUNCE OUR NEW STE PACKS WHICH OFFER YOU THE VERY BEST DEALS AT THE VERY BEST PRICES !!

PHONE TODAY - (0903) 700714

ALL ATARI STE PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES

	512k	1mb	2mb	4mb
ATARI STE STANDARD PACK. consists of the computer with mouse, tv lead, manual and all connecting leads etc. The Standard Pack is supplied with NO software.	£269.00	£299.00	£329.00	£409.00
ATARI STE DISCOVERY 1. consists of the Standard Pack and STOS, First Basic, NeoChrome and 4 games (Carrier Command, Space Harrier, Outrun, Bomb Jack)	£279.00	£309.00	£339.00	£419.00
ATARI STE DISCOVERY 2. consists of the Standard Pack and First Basic, ST Tour, NeoChrome and 4 games (Dragons Breath, Super Cycle, Indiana Jones, Anarchy)	£279.00	£309.00	£339.00	£419.00
ATARI STE TENSTAR. consists of Standard Pack and Asterix, Chess Player 2150, Driving Force, Live + Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Squeak and Trivial Pursuit II	£289.00	£319.00	£349.00	£429.00
ATARI STE POWER. consists of Standard Pack and 20 top selling arcade games (for individual game titles see the black box on the bottom left of this page)	£289.00	£319.00	£349.00	£429.00
ATARI STE EXTRA. consists of Standard Pack and Kuma word processor, database, spreadsheet & business graphics as well as First Basic, Hyper Paint, STAC Adventure game designer and Prince game.	£289.00	£319.00	£349.00	£429.00
ATARI STE CURRICULUM. consists of Standard Pack and also 3 levels of educational software (from 5 yrs to 50 yrs !!), a word processor, a spreadsheet, a database, HyperPaint and Music Maker II software.	£299.00	£329.00	£359.00	£439.00

AMIGA PACKS

ALL AMIGA PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS ARE UK STOCK AND CARRY A FULL 12 MONTH COMMODORE WARRANTY. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES

AMIGA A500 BASE PACK A500 computer, mouse, tv modulator, manuals, Workbench, etc supplied 'bare' with no games software * STOCKS VERY LIMITED - SO HURRY *	£299.00
AMIGA A500 1MB PACK A500 computer with extra 512K ram expansion, mouse, tv modulator, manuals, Workbench, etc supplied 'bare' with no games software. * OUR RAM EXPANSIONS DO NOT INVALIDATE YOUR WARRANTY *	£325.00
AMIGA A500 ASTRA PACK A500 512k computer, mouse, tv modulator, manuals, Workbench, etc supplied with 10 great software titles (see A500 1MB ASTRA pack below for details)	£325.00
AMIGA A500 1MB ASTRA PACK Amiga A500 computer, 512K Ram expansion with clock and battery back-up, mouse, tv modulator, manuals, Workbench etc disks, plus the ASTRA 10 games pack including the following games: Datastorm, Dungeon Quest, E Motion, Grand Monster Slam, Kid Gloves, Powerplay, RVF Honda, Shuffle Puck Cafe, Soccer and Tower of Babel	£350.00
AMIGA A1500 BASE PACK A1500 1Mb RAM (expandable to 9Mb) computer with 2 x 3.5" 880k disk drives built in, and a mouse. The A1500 base pack is supplied with no software.	£599.00
AMIGA A1500 PACK A1500 1Mb RAM (expandable to 9Mb) computer with 2 x 3.5" 880k disk drives built in, mouse and the following software: Platinum Works, Deluxe Paint 3, Populous, Simm City, Battle Chess, Their Finest Hour (Battle of Britain) and 2 books: "The A-Z of Computer Jargon" and "Getting the most from your Amiga"	£855.00

IT'S BACK !! - THE POWER PACK !!

Due to massive customer demand, we are proud to announce that we now have further stocks of our best selling Atari ST software pack comprising of...

Afterburner, R-Type, Gauntlet 2, Super Hang On, Space Harrier, Star Glider, Overlander, Super Huey, Pac Mania, Nebulus, Eliminator, Predator, Xenon, Bombast, Bomb Jack, Double Dragon, Black Lamp, Out Run, Star Goose and Star Ray.

All of the above games are available in the Power Pack Software pack for only (STOCKS LIMITED - SO HURRY) -

£34.99 - that's less than £1.75 each !
(requires double-sided internal disk drive)

IF YOU WISH TO PLACE AN ORDER THEN PLEASE SEND YOUR CHEQUES, BANKERS DRAFTS, POSTAL ORDERS, CASH ETC. TO :

BEST PRICES (DEPT NCE), UNIT A, GRAFTON PLACE, WORTHING, WEST SUSSEX, BN11 1QX



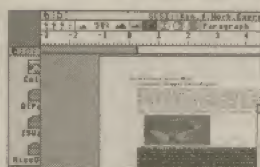
OR USE YOUR ACCESS OR VISA AND RING OUR TELESales ORDER HOTLINE AT ANYTIME BETWEEN 10.00 AM AND 12.00 MIDNIGHT, MONDAY TO SATURDAY, AND SPEAK TO ONE OF OUR FULLY TRAINED STAFF ON :



(0903) 700714

All prices include 17.5% VAT and free UK delivery (average 4 - 5 days) unless otherwise stated. All prices / specifications / special offers are subject to change without notice. Goods usually despatched same day when cleared payment is received before 2pm. Personal cheque clearance taken 7 days. Please make cheques/P.O.s out to BEST PRICES. Mail order only. No cash please. ADD £100 INC VAT FOR NEXT WORKING DAY UK DELIVERY FOR ORDERS PLACED BEFORE 2 PM

BEST PRICES MAIL ORDER - OUR TELESales LINES ARE OPEN FROM 10.00AM TILL 12 MIDNIGHT - MONDAY TO SATURDAY



• **EasiWriter**, a powerful program with some nice Mac touches.

space inside any Arc. Two TML-equipped Arcs can be linked via a cable and can then communicate at over 10Mbits per second. Files can be swapped from one machine to another by dragging them into a 'Send' window or out of a 'Receive' box, or the system can act like any other filing system. A later development will allow a network of up to eight Arcs to communicate this way, with one acting as a sort of 'telephone exchange'.

AS EASI AS...

At first look, Icon Technology's **EasiWriter** is good. It's a windowed word processor which, unlike its obvious competitor **First Word Plus**, uses outline fonts and RISC OS printer drivers to the full. It has a very structured approach to writing – you can set up a hierarchy of chapters, sections and sub-sections, incorporate lists and so on, and each can have a text style associated with it. It definitely feels like a word processor rather than a DTP package, despite the fact that

you can incorporate drawings and sprites into your document. Rather cleverly, these can even flow with the text, so you can use it along with Computer Concepts' **Equator** as a technical authoring package.

Table creation is a dream – it's definitely the star turn. You tell **EasiWriter** to begin a table and just type. You can insert or delete rows, add borders and guidelines, and create items that span two or more columns.

The (as yet rather unreliable) beta-release of **EasiWriter** betrays some of Icon's strengths in the Mac world and relative inexperience of Acorn software. A couple of 'vital' functions are missing, in particular the ability to use the Copy key to delete forwards or to change case. But Mac touches, like any typing replacing what's selected, are neat. Sadly **EasiWriter** doesn't inherit the Mac's Tab key to move between fields in a dialogue. Later on this year, Icon will release **TechWriter**, a big brother with equation-editing facilities built in. There's already a 'junior version': by editing a simple text file you can limit the menu items that appear, simplifying **EasiWriter** down to bare essentials.

I can see this becoming the word processor of choice in the home and schools. The fact that it needs 2Mb to run could be just the excuse people need to upgrade. But businesses will remain sceptical of it until a mail-merge utility is released. Icon Technology: 0533 546225. Pres: 0275 72046.

Ken Coumarin

CPC

- Goldmark upgrades Nirvana for the Plus
- Pang on arcade machine cartridge!
- All Formats computer Fair latest

NIRVANA FOR THE PLUS

One of the unfortunate things about the new Amstrad Plus machines is that not all of the existing software out there will run on it. One of the main casualties was Goldmark Systems' **Nirvana** disk management software. Well now Goldmark is producing a new version which will work on both old and new machines. The only thing for Plus owners to watch out for is that some of the features will not work – the tape archiver, for example. This is because the 6128 Plus has no tape facilities.

There's a copy winging its way to my desk even as we speak, so watch out for it – and for some other Goldmark goodies, come to that.

PANG

Arrrggggh! Imagine being attacked by wave after wave of vicious killer balloons, great bouncing, monstrous, gaseous bags of... um... air... Well, listen, it's terrifying. OK? It must be, or Mitchell Corp. wouldn't have used the plot for its fabulously popular **Pang** arcade machine. Come to that, Ocean must have thought it a pretty neat idea

too, or it wouldn't have done a conversion for Amstrad cartridge machines.

These grant, inflated bladders are just so much hot air, mind. Give them a good poke with your harpoon gun and they just fall apart. Trouble is, they fall apart into two slightly smaller balloons, and these are just as fatal if they touch you. OK, then, give them another belt with the old harpoon-hobber... yikes! Even more, and even smaller, balloons! It's only the smallest balloons which actually disappear entirely when you hit them, so things are a bit tougher than they might be.

You start off with six lives, a time limit and a couple of big bouncy balloons to dispose of. The game is part reflex, part strategy. The reflex comes in when you try to dodge the wallowing gasbags. The strategy involves dealing with just one balloon at a time, so that you have the minimum number possible on-screen at once.

The action takes place against a variety of scenic backgrounds around the world. There are 17 different locations, each with 3 screens, so there's plenty to keep you going – especially



AMIGA REPAIRS JUST £44.95 inc.

VISA

- ★ Commodore authorised and registered repair centre
- ★ Over 10 years experience with Commodore computers
- ★ 20 qualified technician engineers at your disposal
- ★ We will undertake to repair your Amiga 500 computer for just £44.95 including parts, labour, VAT and post & packing
- ★ Most computers will be turned around in just 24 hours!
- ★ Prices include full service check, overhaul, soak-test and replacement of power supply unit if necessary
- ★ Repairs to keyboard and disk drive also included (£25 extra if these units are unrepairable and require complete replacements)
- ★ All repairs covered by a 90 day warranty



Upgrade your Amiga from 512K to 1Mb of memory for just £25.00
SPECIAL EXCLUSIVE OFFER:

If you submit your computer to ourselves for repair, enclosing this advert along with just an additional £25, we will supply and fit a 512K memory expansion at no extra cost.

How to take advantage of this exceptional offer: simply send or hand deliver your machine to the workshop address detailed right, enclosing payment and this advert and we will do the rest. (If possible please include a daytime telephone number and fault description).

* If you require 24 hour courier to your door, please add £5 else your computer will be sent back by contract parcel post.

WTS ELECTRONICS LTD

STUDIO MASTER HOUSE

CHAUL END LANE

LUTON, BEDS, LU4 8EZ

Telephone (0582) 491949 - (4 lines)

WTS reserve the right to refuse machines that in our opinion are tampered with, to an extent beyond reasonable repair



• *Eek! It's a giant whale! Don't walk into it, or you'll lose the power to shoot.*

since every screen features a different 'puzzle'. Things start off easy enough, but later on there are ladders to climb, blocks to destroy and hazards to avoid.

There are also little creatures that wander on to the screen at times to either help or hinder you. A creature that looks like a giant whale is a pain in the neck, because although it doesn't hurt you, walking into it takes away your ability to fire for several seconds. Crabs are much more useful – they use their claws to pop balloons for you!

You can also pick up extra weapons now and again, but some are more desirable than others. Avoid the dynamite in particular, since it immediately blows all the big balloons into their component little ones! Nasty.

Best of all is the simultaneous two-player mode. You get twice the firepower, after all. Only one problem – you get less than half the strategy. It's not necessarily that much easier.

Did I say the two-player mode was



• *You've got to be able to shin up those ladders pretty sharpish to avoid the balloons.*

the best thing of all? Wrong. The best thing about Pang is the sheer quality of its graphics and sound. Ocean's programmers have done it again, with a cart game that defies its 8-bit origins. It's not quite ST-standard, but it's nearer 16-bit than 8-bit, that's for sure.

Pang sells for the usual stiffish cart price tag of £25, but it is excellent. Gameplay is simple but superbly addictive, while presentation is excellent. If you've got a GX4000 or a Plus, buy it!

ALL FORMATS HOTLINE

Personally, I think all 0898 numbers are a bit of a swizz, but they occasionally have their uses – if only so that you can keep up with the latest venues for the All Formats Computer Fair. Don't expect all the glitz and glamour of the top national shows at these events, but do expect to pick up loadsa bargains.

To find out the latest, call 0898 299 389.

Rod Lawton

C64

- The piracy argument spills over from Express Mail
- System 3's brilliant new cartridge games compilation
- Crystal Gazing: Looking ahead to future games

PIRACY PREDICAMENT

Over the past few days I have been contemplating the subject of piracy, and no doubt the mention of the 'P' word has brought moans and groans of despair from many among you, but the subject is not as twisted or convoluted as it may appear. Ask a pirate (sorry, thief) why he/she pirates and the majority of excuses will be "The software houses charge too much – many games are not worth the high prices". So, ask a software house why its prices are so high and the majority of answers will be "the software pirates force the prices up by their actions". Are you thinking what I'm thinking? If greedy people keep their grubby mits off pre-release demos and new games then indeed prices may well fall. A very simple answer to a very serious problem... maybe.

It would be interesting to see whether the cartridge renaissance has done anything to curb piracy on the 64 (although I have recently heard rumours of a 'cracked' version of Navy Seals on disk). This then suggests another

couple of reasons for piracy; people do it either to prove themselves as competent hackers or as a personal challenge. Is there actually an answer to the problem, or is it just a fact of life? Your views on the subject are very welcome.

ALL THE BEST

System 3, one of the firmest cartridge advocates, have recently released what I consider to be one of the best compilations around. The Premier Collection contains six of System 3's best games, for the meagre sum of £15.99 (cassette) or £19.99 (disk) – that works out very cheaply indeed. I've already reviewed the Last Ninja (Express 130), so I'll briefly cover the remaining five; The Last Ninja II is, not surprisingly, the sequel to the Last Ninja, and the gameplay is identical to its predecessor. The game is set in modern-day New York, and the levels span Central Park, the streets, the sewers, the skyscrapers, and eventually the bad-guy's headquarters. Graphics are superb, as is the Malt



DATAPLEX COMPUTERS LTD.

129 Bath Road,
Slough,
Berkshire,
SL1 3UW

Tel: 0753 35557

19 High Street
Old Town
Swindon,
Wilts

Tel: 0793 488448

SHOWROOM
open:
Mon - Fri
9.30 - 5.30
Saturday
9.30 - 4.30
MAILORDER
Consumables
£1.50
Hardware
£8.00
Prices
excluding VAT

AMIGA A500 HARDWARE

Amiga A500 Screen Gems +
1 Meg Pack£309
Amiga A500 Screen Gems Pack + free
disks + 10 extra games pack£345
Amiga A500 1 Meg Class of 90's£459
Amiga A500 1 Meg Class
of 90's (First Steps)£459
Amiga A1500 Computer£549
Amiga A1500 + 1084S monitor£759
Amiga A1500 + Philips CM8833 MKII£725

SPECIAL OFFER

While stocks last

Amiga A500 + TV Mod + Mouse +
system disk + manualsonly £269

ATARI COMPUTERS

Atari 520STFM discovery pack
includes 4 games£240
Atari 520 STE Turbo Pack
includes basic STOS and 7
games + Joystick£310
Atari 1040 STE extra pack includes
ST Words, ST Calc, ST Basic, ST
Graphics, Hyper-Paint, STOS, 1st
Basic, Print Game£399

AMIGA/ATARI DRIVES

1 Meg 3.5" internal£49
1 Meg 3.5" external£60
1 Meg 5.25" external£90

ACCESSORIES

512K Ram + clock£39
Joystick£10
10 Blank disks in library box£8
Mouse Mat£9
Amiga/Atari Mouse£29

MONITORS

Philips CM8833 MK II Colour
Monitor + FREE Lead£189
Commodore 1084S£199
SM 124 (Atari)£99

PRINTERS

Star LC10 Mono£129
Star LC200 Colour (9 pin)£180
Star LC24 200 (24 pin)£210
Star LC24 200 Colour£245
Panasonic KXP1124i + lead£239
Panasonic KXP 1123£180
Panasonic KXP1624£329
Citizen 120D +£120
Citizen Swift 24 +
Colour Upgrade£259
Citizen Swift 9 +
Colour Upgrade£185
Epson LX400£126
Epson LQ400 (24 pin)£199

LASER/INKJET PRINTERS

PLEASE CALL FOR PRICES

COMPUTER AUCTION

**SATURDAY 22ND JUNE AT
BOWLERS, LONGBRIDGE RD
TRAFFORD PARK,
MANCHESTER M17**

Sale starts 10.00am viewing and testing
from 8.00am

About 1000 lots of computer equipment
including:- IBM, Compaq, Amstrad,
Toshiba, Apricot, Apple etc. Monitors,
printers, disks, modems, software,
consumables, home computers etc

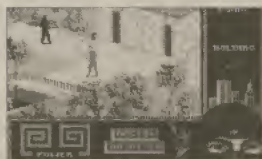
**FOR YOUR CATALOGUE RING
COMPUTER CONNECTIONS ON
0254 813316**

P.S WATCH PRESS FOR POSSIBLE
BIRMINGHAM/MIDLANDS
AREA AUCTION

Gray music, and the puzzles are nicely structured (and often quite clever). The range of weapons is reminiscent of the original, but combat has a unique twist – when an enemy has been defeated you have a limited time before he regains his strength and attacks again. A highly playable game, but remember: there is VERY LITTLE difference between this and the Ninja Remix.

International Karate was probably the company's first major success, way back in 1986. It walked all over *Exploding Fist* in terms of graphic quality, animation, and the superlative Rob Hubbard soundtrack. It follows the usual a two player format, with the usual range of moves (as well as several humorous touches). Sadly, it does tend to show its age alongside newer releases (not to mention the excellent *IK+*). However it is extremely enjoyable to play, and the innovative bonus section is just the icing on the cake (albeit a tad stale).

Dominator is a multi-level, multi-load shoot 'em up, and boasts a vast collection of extra weapons and ship enhancements. The graphics have been supplied by Dokk and Hugh Riley, and while they are both excellent artists in their own right, their graphics simply don't gel. So what you end up with are some surreal backdrops (with organic plant life and huge frogs) combined with shiny spaceships and aliens. Still, it offers the player some hectic vertical and horizontal stages, as well as some great music. I would not recommend it usually, but the price renders it



• *Last Ninja II* – a highly playable game.

unmissable.

Myth is undoubtedly the best of the bunch, and the attention and care lavished on it simply oozes out. The game is set across several time zones, each based on various myths or legends. Levels include Hades, the Vikings, the Pyramids, plus an utterly superb ethereal level. While the game has a few faults and bugs, the astounding Bob Stevenson graphics captivate and enthrall. The only problem with *Myth* is that it's so fiendishly difficult! One has to try so hard to reach the next section, if only to see the display of graphics! A great game, but not for the short-tempered.

Flimbo's Quest is a jolly platform romp following the bog-standard 'Girlned is captured by evil tyrant and you have to kill him and rescue her' format. Flimbo is a cute little fellow, who traverses a number of landscapes picking up vital objects and money (to use in the inter-level shop). Of course, there is the usual selection of nasty enemies to hinder your progress – most of them are extremely cute indeed! The real joy about *Flimbo's* is the scrolling;

superb two layer parallax, with loads of colour splashed around. The game is vaguely similar to *Hawkeye*, in that the walkabout/pick up element becomes slightly repetitive as the game progresses. Having said that, it's a jolly game at a laughable price.

To complement the *Hunter's* review in Express 131, here is a splendid little listing for infinite lives. It works fine on the original *Thalamus* version, but I'm not sure about the Kixx re-release – if it doesn't work, sorry. The game also loads slightly differently, so don't be alarmed!

```
0 REM *HUNTER'S MOON-INFINITE
LIVES-CASSETTE ONLY*1
FORA=544TOS912
READB:POKEA,B:C=C+B:NEXT3
IFC=5824THENSYS5444 PRINT"DATA
ERROR":END5
DATA32.44,247,169,21,141,177,3
6
DATA169,55,141,178,3,169,106,1
417
DATA179,3,32,106,245,169,67,14
18
DATA39,192,169,2,141,44,192,32
9
DATA191,3,96,169,244,141,154,3
510
DATA169,0,141,242,193,76,226,1
93
```

And here are some Action Replay pokes for the *Last Ninja II* and *Myth* (reviewed above). There is a poke for each level, and they reward you with infinite lives in both cases.

```
LAST NINJA II LEVEL1 - POKE
37456,173 LEVEL2 - POKE
36690,173LEVEL3 - POKE
31852,173LEVEL4 - POKE
35481,173LEVEL5 - POKE
35771,173LEVEL6 - POKE
36879,173LEVEL7 - POKE
34444,173MYTHLEVEL1 - POKE
24830,165LEVEL2 - POKE
24882,165LEVEL3 - POKE
24952,165LEVEL4 - POKE
23672,165
```

ON THE HORIZON

It's official – the software slump is now upon us, indeed sister magazine *Commodore Format* has received only a handful of games for review over the past few weeks. Perhaps the only games to be found until July will be compilations and budget re-releases.

There is no need to shed a lonely tear – it happens every year. The only consolation is the thought of all those great games in the future. Here are a few titles which should be worth the wait: *The Hits II* (Thalamus) another great compilation featuring *Snare*, *Retrograde*, *Creatures*, and *Summer Camp*; *Night Breed II* (Ocean) Not sure about the title, but the game (based on a Clive Barker novel) should resemble its so-so predecessor quite closely. *Toki* (Ocean) a conversion of the 20p eating arcade machine, should be something to look out for. *Creatures II* (Thalamus) I've seen a recent demo, and the game looks 'well cool'. Needless to say, reviews of these titles are imminent.

Andy Roberts

ATARI ST ★ ATARI ST ★ ATARI ST ★ ATARI ST ★ ATARI A brilliant offer for readers of New Computer Express! **Devpac ST 2**

FROM HISOFT ONLY £44.95

Devpac ST Version 2 is widely regarded as the most powerful assembly language development system for the Atari ST. It incorporates a debugger, stand-alone assembler and a fast linker

IT INCLUDES:

- **GenST** Assembler is a high-performance, full-featured, two-pass Motorola standard macro assembler at up to 75,000 lines per minute. It has multiple modules and sections, repeat loops and macro calls that maybe nested as deeply as memory allows.
- **MonST** Debugger is an advanced symbolic monitor, debugger and disassembler. Now in addition it can offer Multiple window display, full expression evaluator, up to 22 significant characters in symbols, viewing of source files and conditional breakpoints.
- **Example Files** of a wide variety including a full GEM type windowing application and an example desk accessory.

The package comes complete with an extensive ring-bound manual plus notes on the various operating system levels and debugging strategies.

Order now by phone from the NCE mail order service or send the coupon to our FREEPOST address.

HOTLINE NUMBER 0458 740111

DevpacST 2

version 2

Complete Assembler/Debugger System
for the Atari ST Computers

SAVE
£15

Yes, I would like to order a copy of

Devpac ST 2

Name _____

Address _____

Tel No _____

I would like to pay by Access Visa

Cheque PO

Please debit my credit card

No _____

Expiry Date _____

Tel. No _____

Send & make cheques payable to
Future Publishing, FREEPOST, The Old
Barn, SOMERTON, Somerset. TA11 7BR

SPECTRUM

- D.I.C.E disk doctor utility improved - for the SAM too!
- CodeMaster's Slightly Magic: Destined to go to the top?
- Two totally red hot pokes for Total Recall and Bumpy

DICE IMPROVED

For a few years now Plus 3 owners have spoken in reverential, hushed tones about DICE - a disk doctor type utility for their machines from Kobrahsoft. The Disk Information Copier Editor, to give it its full name, is a powerful utility packed with impressive features, and in true washing powder style is now new, improved and better than ever with the release of version 3.0. Not only that but there's also a SAM version to boot which is a definite boon to Coupe owners lives, make no mistake.

DICE offers a multitude of functions that let you manipulate your Plus 3's disk drive for all you're worth. With it you can access any part of the disk; make backups; read, examine and change any sector; get a full directory listing; recover erased files; read file headers; and see a graphical display of how much space is left on the disk and where the files are located, to name the most impressive features.

This latest version also provides high capacity formats, which means 178K, 193K and 203K-sized disks are now possible, and an option for

extended directories.

DICE Version 3.0 in its Plus 3 incarnation costs £14.95 on disk with a chunky manual. The SAM version seems pretty similar but that's no bad thing and comes complete with a similarly thick and well-written manual for only £12.95 on 3.5-inch disk. Kobrahsoft tell me it's compatible with all Coupés, whatever ROM they might have, although they're not sure how harmoniously it will co-exist with the new MasterDOS at the moment.

You can find the pretty clever people at Kobrahsoft Software by writing to "Pleasant View", Hulme Lane, Hulme, Longton, Stoke-on Trent, ST3 5BH.

MAGIC MOMENTS

Last week I printed Mark Harris's poke for Slightly Magic and thought "what's that then?" thereby showing how untrendy and out-of-date I am. In a desperate attempt to "get with it" (man) I put on my wing-collared shirt and afghan coat and went out to purchase it. Now I know the said thing is a CodeMaster's cheapie and a very good one at that. It's another one of those arcade adventures

they're so good at churning out although this time without any sight of their lovable star character, Dizzy. Instead you control Slightly, a well-animated wizard who needs to rescue a princess from a dragon. But don't let that last sentence put you off because Slightly Magic is very well done indeed with loads of colourful and deviously arranged screens to get through.

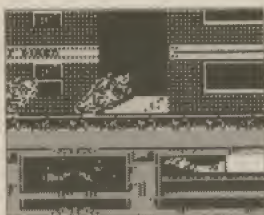
There's the usual assortment of nasties, all well-drawn and animated, who luckily can be seen off with various spells that you can collect. Mainly it's a case of picking up objects and spells and using them all in the time-honoured arcade adventure style.

Definitely a cut above the average budget offering, this is a welcome and original departure from tired re-releases and ripped-off arcade clones that make up the cheapo market. Hurrah for CodeMasters!

Anything you want to say to me? If you've got any comments, criticisms or suggestions regarding the column I'd welcome them with open arms and cheers aplenty. Also wanted are any tips, pokes, wrinkles or cheats for the Speccy, either for games or general using. Send everything to me, that's Robin Alway at The Spectrum Column, New Computer Express, 30 Monmouth Street, Bath BA1 2AP. Much appreciated!

PRIME POKES

I've got two finest quality prime pokes for you this week thanks to our old brother and homeboy, Mark Harris. The



Follow the routine of the prime pokes and you will get ahead in Total Recall.

first routine is for Total Recall and it hasn't been done by anyone else apparently. In case you're not clear on all this hacking business, the face saving, score enhancing benefits of pokes can be yours if you do the following:

- 1) Type in the listing
- 2) Save it if you require its help again
- 3) RUN the program
- 4) Start your game tape from the beginning. That's it.

```
10 REM TOTAL RECALL 20 FOR
N=61412 TO 989: READ A: IF
A=999 THEN POKE N,A: NEXT N 30
PRINT "START 'TOTAL RECALL'"
TAPE="USR 61412 40 DATA
221,33,14,175,17,0,16,62,255,5
5 50 DATA
205,86,5,48,241,62,144,50,0,19
1 60 DATA
175,50,2,191,195,109,175,62,17
6,50 70 DATA
52,190,33,18,240,17,223,176,1,
```

WE MUST BE MAD

Due to massive bulk buying and low cost advertising we can offer you high quality European manufactured disks at these extremely low prices

3.5" DSDD DISKS 31p INC VAT + LABELS

250 + @29p each; 500 + @ 28p each; 1000 + @ 27p each
ALL DISKS CERTIFIED 100% ERROR FREE

SONY 3.5" 38p 3.5" DSDD65p
5.25" DSDD19p
5.25" DSDD36p
DSDD BULK

100 Capacity Disc Box.....3.75	50 Capacity Disc Box.....3.25
Mouse Pockets.....1.50	Mouse Mat.....1.75
Printer Stand.....3.75	Amiga Dust Cover.....2.50
Posso Box.....15.00	Atari Dust Cover.....2.50
Amiga 512K RAM Expansion with clock.....32.00	
Amiga/Atari External Drive.....59.95	

THIS MONTHS 200 3.5" DSDD DISKS SPECIAL OFFER + 2 x 100 CAP BOXES 64.95

Please add £2.85 p&p/next day £7.50. Cheques/POs to
PLC COMPUTER SUPPLIES (Dept NCE) TELESALES HOTLINE
11 Meakin Avenue, Clayton, Newcastle, Staffs ST5 4EY. **0782 212970**



Horsforth Computer Centre

249 New Road Side, Horsforth, Leeds, LS18 4DR

Atari

520 STEF Discovery Pack inc 4 games, STOS, Neochrome, Basic, Free Weekend Break £249.00

520STE Turbo Pack inc 8 Games Joystick and Music Maker Software £329.00. 1/2 Meg Upgrade for STEF only £65.99 External Drive with built in PSU/Fuse £65.00

PC

286 10MHz with Single Drive £399 (+VAT)
PC Twin Joystick Card for XT, AT, 386 £14.99
PC Twin Joystick Card for XT only £12.99
PC Warrior Joystick £14.50
1.44Mb 3.5" Teac Disk Drive £55.00
1 2Mb 5.25" Teac Disk Drive £60.00
Sony Branded 3.5" HD (Box of 30) £12.50

Tel: (0532) 590020
Fax: (0532) 590018



We offer a free delivery on all orders over £50.00. Orders below £50 please add £2.50 P&P. Please make cheques payable to TEC-NOL Ltd.

Amiga

A501 Screen Gems Pack 4 Games, 1Mb RAM only £389.00 with Free Mouse Mat, 10 Disks, Disk Box and Dust Cover and Free Weekend Break. 1/2 Meg Upgrade without Clock only £31.00. External GVP 3.5 Disk Drive £62.50

High Quality Bulk Disks

10 3.5" Disks £5.50
50 3.5" Disks £26.99
with Free 40 Cap Disk Box
100 3.5" Disks £49.99
with Free 80 Cap Disk Box
Available in Red, Blue, Grey, White, Yellow or Orange.

Accessories

100 Cap 3.5" Disk Box Lockable £6.99
80 Cap 3.5" Disk Box Lockable £6.50
40 Cap 3.5" Disk Box Lockable £4.75
Posso Box 3.5" 150 Cap £14.99
High Quality Mouse Mats £4.00
Null Modem Cable to Link 2 Amigas/Ataris £4.99
Atari or Amiga Dust Cover £3.99
Zoomer Joystick for Flight Sims £24.99
ZY-FI Amplifier & Speakers for Amiga/Atari STE/Archimedes £35.00
Amiga/Atari Mouse £15.99

50 80 DATA
0,237,176,195,13,191,62,206
90 DATA 50,192,133 : REM
AMMO 100 DATA 50,4,99 : REM
TIME 110 DATA
50,252,101,50,156,130,50,195
146,50,93,170 : REM ENERGY
120 DATA 195,223,190,999 :
REM END

This second listing is for Bumpy, an excellent Your Sinclair cover game of a while back. Follow the instructions above to get it working and leave out any poke you don't want. Mark assures me the hacks should work as Multiface pokes as well. What a bargain! Infinite thanks for all eternity go once again to Mark. And he'd like to say hello back to fellow hacking personage Steven Kemp.

11 POKE 47771,0 : REM LIVES
12 POKE 47386,0 : REM
HAMMERS 13 POKE 51576,0 :
POKE 52155,0 : REM KEYS 14
POKE 51717,0 : POKE 52296,0
: POKE 52807,0 : REM WATER
15 POKE 43963,86 : REM 99 of
everything 16 POKE 47976,x :
REM START LEVEL PLAYER 1
(x=0-99) 17 POKE 47992,x :
REM START LEVEL PLAYER 2
(x=0-99) 18 REM start level
poke needs 99 of everything
to work 30 MERGE "" : RUN

Robin Alway

MACINTOSH

- The first funny bugs in System 7 begin to surface
- How to improve your Finder's functionality
- Font conversion the easy way - thank the lord!

RUMOURS...

Want to see a bug in System 7? Try this: type some comments into the Get Info window (which is accessible from the File menu) and click on the check box to

lock the file. Close the Get Info window and then open it again. Hey presto! — your comments were not recorded by the Finder. To make sure comments are kept, you have to type them in, close the

window, open it again and then lock the file. Not a spectacular bug, but enough to keep Apple's software developers on their toes...

Incidentally, if you're still unable to get your hands on System 7, it's worth taking eight disks into your local Apple dealer and asking if they'll just copy the new System for you. Apparently it will be another month or so before all the documentation is available in quantity — and the full package, of course, will cost you £50. But if you can make do without the manuals, many dealers will copy the software for you free of charge. Of course, you'll find they're more likely to do it if you actually bought your Mac

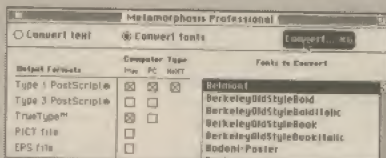
METAMORPHOSIS PRO

The main complaint from people who use Adobe Type Manager (ATM) is that it can't cope with Type 3 fonts — which means that many older fonts appear jagged on the screen and don't print out well on QuickDraw printers like the StyleWriter. Well, help is at hand from a neat program called Metamorphosis Professional.

Metamorphosis Pro is a font manipulation program which allows you to, among other things, create editable outlines of any font (so you can easily create logos and so on) and convert fonts between Mac Types 1 and 3, as well as TrueType, PC PostScript and NeXT (as if anyone actually owned a NeXT). So, while this might seem more like a professional font designer's tool, many will see its great advantage as allowing users to convert all their old fonts so that they will run under ATM.

The program is easy to use — converting fonts is especially easy, with only a few keystrokes required. Although the program costs £110, this is fairly reason-

able when you consider that one new font could well cost you the same amount. And if you have a QuickDraw printer and System 7, you could convert all your PostScript fonts to TrueType so that you don't need to use ATM at all. Metamorphosis Pro is highly recommended. Contact Softline on 081 642 4242.



• Metamorphosis Professional: Makes converting between font formats child's play.



Peterborough

11 Stonald Avenue, Whitlsey,

OPEN 9AM - 7PM / 7 DAYS PER WEEK

★ ALL PRICES INCLUDE VAT, POSTAGE & PACKAGING ★

THANK YOU FOR YOUR CUSTOM RESPONSE.
NAME OF YOUR COMPUTER/PRINTER, TO INSURE A SPEEDY WHEN ORDERING PLEASE STATE CATALOGUE DISK 1.00
AMIGA PD
Colour 11.00, 10.00
Swift 9/24 2.60, 2.35
Citizen 120D 2.60, 2.35
LC2410 2.50, 2.40
LC10 Colour 6.00, 5.50
Star LC10 2.50, 2.35
NEC P6+/7+ 4.10, 3.80
Epson LX80/86 2.60, 2.35
9512 2.95, 2.75
PCW 8256/8512 3.55, 3.30
Amstrad 2000/3000 3.10, 2.85
PRINTER RIBBONS: 2+ 6+

4 Player Games Lead 0.34
Joy/Mouse Ext. Lead 7.99
JoyStick 3m Ext. Lead 1.99
JoyStick Splitter Lead 1.99
Amiga Scart 4.49
ST Scart 4.49
Amiga A500 K/Board D/Cover 4.99
Comm. 1084 Monitor D/Cover 5.99
Alan ST/FM D/Cover 10.99
Anti-Glare Screen (12"/14") 54.99
Desktop Copy Holder (A4) 54.99
Replacament A500 PSU 39.99
Tilt & Turn Monitor Stand 24.99
2 Pce. Printer Stand 19.99
with paper tray 17.99
Multi-Pocket 3.99
Quickshot PRTCHON 1 9.99
WAVERIC 1 14.99
FLIGHTGRIP 1 8.99
APACHE 5.99
KONIX NAVIGATOR 12.99
Sonmax ZIPSTICK (auto-fire) 10.99
3.5 Bulk DS/DD Disks 0.34
3.5 Mitsubishi DS/DD (10) 7.99
3.5 Disk cleaner 1.99
3.5 Disk cleaner 1.99
3.5 10 cap Rylord 4.49
3.5 40 cap lockable box 4.49
3.5 80 cap lockable box 4.99
3.5 100 cap lockable box 5.49
3.5 80 cap Stackable Bank 10.99
Zydec Alan ST Ext. Drive 54.99
Amiga Ext. Drive 54.99
Amiga Ext. Drive 54.99
Replacament A500 PSU 39.99
Tilt & Turn Monitor Stand 24.99
2 Pce. Printer Stand 19.99
with paper tray 17.99
Multi-Pocket 3.99
Quickshot PRTCHON 1 9.99
WAVERIC 1 14.99
FLIGHTGRIP 1 8.99
APACHE 5.99
KONIX NAVIGATOR 12.99
Sonmax ZIPSTICK (auto-fire) 10.99

COMPUTER CONSUMABLE SPECIALIST

HART MICRO



from that dealership...

One thing that has upset some people is that removable hard disks cannot be used as virtual memory storage areas under System 7. But then, as one Mac developer said, "Removing a hard disk while the Macintosh was using it for virtual memory would be rather like ripping out SIMMs while the Mac was still turned on."

Apple Computer in the States is facing a lawsuit which claims that the company made false financial statements to the public in 1991, prior to its May financial report on the third financial quarter, which said that corporate earnings were under pressure. An Apple spokesman has said that the claims are "completely without merit", and that the company will oppose them all. Following the financial statement, Apple shares dropped somewhat; the plaintiffs are hoping to bring suit on behalf of all purchasers of Apple common stock between January 17 and April 30 this year. Some of the officers and directors of Apple have also been named in the case.

Apple has ordered a new Cray supercomputer, said to be worth over \$4.6 million. It will replace the Cray that Apple bought in 1986, and will be used for research and development into subjects such as the flow of air and dust particles in computer cases.

Rumour has it that an Apple executive met a Cray exec just after the purchase of the first supercomputer in 1986, and told him proudly that Apple was going to use the Cray to help

develop new Macs. "So what," replied the Cray executive; "We use Macs to help develop new Crays!"

ALIASES AND IMPOSTERS

There is one thing which is incredibly annoying when using the Macintosh. If you double-click on a document which has been created with an application not on your hard disk, you are met with a dialog which tells you that "the application is busy or missing." Fortunately, I'm not the only one to find this a pain in the neck, and some programmers have

done something about it. Two utilities are about which cure the problem – the shareware Application Replacer, and Imposters, which is free.

Both require setting up – Application Replacer is easy, while Imposters requires you to use ResEdit, which is not for the fainthearted. Once you've done this, double-clicking, say, a MacWrite document will open the word processor of your choice and will read the file in (assuming that it understands the format). Both utilities are available on CIX, in the 'mac/files' list; my choice is

for Imposters, but remember that you will also need ResEdit to use this one.

Those who fancy having 'aliases' of applications (1K or 2K files which, when double-clicked, open the real application) don't have to upgrade to System 7. Again on CIX is an application called Alias which creates, yes, aliases. It's easy to use, and means that you can have at least a tiny bit of System 7's functionality without going through the hassle of upgrading.

Ian Wrigley

POSTCARD FROM AMERICA

The Ili is the junior partner in the high end compact Mac line. It offers 68030 power at an "affordable" price. But owners have noticed that there are times when the Ili slows down. One is when it's performing tasks that could use a math co-processor, which is optional. The other slowdown comes when displaying 256 (8-bit) colours on the screen.

Several compact Macintosh models use a portion of RAM memory for video display. This is a good feature, since it doesn't force users to install costly video boards. Unfortunately, the more color you want, the slower things get. A 5Mbyte Ili runs two times faster when displaying only black and white, over 256 colours. Things get a bit better when running only 16 colours, but still slower. What's going on?

There are two banks of memory on the Ili motherboard. Bank A is always used for the video RAM. The second bank is filled with whatever flavors of single in-line memory modules (SIMM) users can afford. The memory bottleneck occurs in Bank A.

As the Mac boots up, the video and other parts of the operating system are loaded into the memory heap. This doesn't fill up all of the megabyte of RAM in the bank, and there's still plenty of room for most applications. All of this action makes the bank so busy that access slows – just like making a deposit on pay day.

The solution is simple – force the Macintosh to move the applications out of Bank A and into higher Bank B memory, where it's not involved with the video. Apple provides users with the tool to accomplish this business – the RAM cache setting in the General CDEV (or the Memory Control Panel in System 7).

If the RAM cache is adjusted to 768K or greater, there's no room in Bank A for applications. It's all video and cache, which makes the Ili run almost as fast in 8-bit colour as in black and white.

This trick also works for users of Macintosh Ili running on-board video. That's a real cachiers check. David Morgenstern

NEW COMPUTER EXPRESS

Britain's biggest selling computer weekly, packed with the latest news, reviews and technical tips for your machine.

Save time, save trouble, and avoid disappointment...
guarantee your copy of NCE every week
and get it delivered at no extra charge
54 ISSUES FOR JUST £47.50

Complete and return the coupon or telephone our credit card hotline on 0458 74011 NOW!

YES! Please enter my subscription for 54 weekly issues of New Computer Express at the rate ticked below.

- | | |
|--|---------|
| <input type="checkbox"/> UK | £47.50 |
| <input type="checkbox"/> Europe | £79.95 |
| <input type="checkbox"/> Rest of World | £104.95 |

N.B. All overseas subs are sent by Airmail for speed and safety.

Name

Address

Postcode

Tel

I wish to pay by (please tick as appropriate)

- ☐ Access ☐ Visa ☐ Cheque ☐ PO

Card No

Expiry date

Please make cheques/PO payable to Future Publishing Ltd and send with this coupon to: NEW COMPUTER EXPRESS, SUBSCRIPTIONS, FREEPOST, SOMERTON, TA11 7BR.

WHOLE WIRED WORLD



Steve Gold continues his search for hot computer news from around the globe. This week he's checking into the White House for the latest on piracy, monitoring Apple's next moves, getting networked up and trying out German peripherals...

GERMANS BOOST PORTFOLIO

Despite what the adverts say, the Atari Portfolio being sold at £199 comes with just 128K of RAM. While this can be expanded to 640K using expansion cartridges, it is an expensive way of boosting memory to that of a basic desktop machine. Which is why Becker & Partners in western Germany has come up with a low-cost expansion system for the pocket machine.

Becker & Partners' solution is to latch on what it calls a Trans Drive to the Portfolio. The interface unit connects the Portfolio interactively to any PC compatible, allowing it to access RAM and disk drives attached to the PC on a purely transparent basis.

Pricing on the Trans Drive is quite reasonable at DM 198 which works out to be around £80.00 at current exchange rates. The company also supplies budget RAM modules for the Portfolio, if you really have to expand memory while on the move.

Contact: Becker & Partners Mobile Datensysteme, Postfach 190, Wilhelmstrasse 91, Biktoriastrasse 51, 5100 Aachen, West Germany.
Tel: 01049-241-509018
Fax: 01049-241-509577

APPLE TO LAY OFF 1,500 STAFF

Despite the fact that the trio of Mac Classic computers - unveiled last October - are doing well, the recession appears to have hit even the mighty Apple. The computer giant is reported to be getting ready to axe 1,500 jobs.

The good news - for users of the Mac at least - is that the bulk of the job cuts will be in administrative depart-

GET TOUGH WHITE HOUSE BEGINS TO BACK ANTI-PIRACY PUSH

The US Government is to help stamp out rampant piracy in the Far East, and other parts of the world.

The common need for the protection of intellectual copyrights brought



• White House won't accept blatant piracy.

company giants from the computer, pharmaceutical and movie businesses to the White House recently where they testified before a US congressional committee. All appealed for an endorsement of negotiations for a free-trade agreement with Mexico and a new round of lowering international trade barriers.

The meeting ended with the US government agreeing to seek stronger commitment from all its trading partners over intellectual property rights.

Put simply, this means that, if non-US companies are looking to do business with the US, then their governments must

look very seriously at passing appropriate legislation to protect valuable intellectual copyrights.

For the computer industry, this means that the flow of pirate software from the Far East and other countries that do not recognise international copyrights will cease or at least be considerably slowed down.

US and European business software publishers say they are losing millions of dollars every year, because certain countries are not taking software piracy seriously. But financial based pressure from the White House is sure to prompt rapid changes.

ments and shouldn't directly affect sales and support of the Mac.

Layoffs are not particularly new for Apple. These will be the fourth in the company's 15-year history. In 1981 Apple shaved 40 people from the payroll, while in 1985 1,200 jobs were lost and a further 400 staff were axed last year.

HAYES STEPS INTO LANSTEP

Hayes has confirmed that its Lanstep Network Operating System (NOS) is now shipping to resellers in the US.

Plans call for the technology to be unveiled in the UK on May 29. According to Dennis Hayes, the company's president, the UK rollout marks the first stage in a series of European launches for the technology.

"We first unveiled Lanstep at Boston Network in the US and the response has been excellent. Resellers appreciate the unique opportunity that the technology offers," he said. "What Hayes has done is to combine the benefits of low end net-

works - cheap pricing, ease of installation and DOS compatibility - with the features of high-end systems," he added.

Hayes went on to explain that Lanstep's pricing is in line with current low-end systems, yet has all the advantages of a high-end system without the negative aspects of high-end systems - high pricing and intensive use of valuable system resources.

Hayes has gone for a modular approach with Lanstep. The basic starter kit for up to five users costs \$595.00. A developer kit is available for the same price. Upgrade packs, which add another five users to the network, cost \$395.00, while a mail gateway upgrade costs exactly the same.

Ten years in the making, the system started to come together about three years ago at what was then Waterloo Micro Systems in Waterloo, Canada.

"When we acquired Waterloo in 1990 we realised the potential of the technology which the company was

already marketing. Lanstep is a completely new technology system," he said, adding that it represents the third generation of networking systems.

One key feature of Lanstep is the fact that data is written straight to disk rather than held in a caching system. This means that an uninterruptible power supply is not required, thus cutting the costs of installing a network still further.

All this is good news for the low end of the networking market - it's bound to force pricing of existing low-end systems such as Sage and the like down still further as the competition bites.

EXPANDING NOTEBOOK DRIVES

Watch out for larger hard drives on notebook PCs soon. Seagate Technology has expanded its range of 2.5 inch form factor hard disk drives by adding two units specifically designed for notebooks.

The new ST9077A drive, when formatted, can hold up to 16Mb of data and comes with an embedded AT interface. Seagate says that since the parts that drive the mechanism, the actuator and spindle motor, are attached to the cover and base of the drive itself, they can withstand greater force than other designs; the company claims the drive can withstand forces up to 150Gs.

The new drive tips the scales at just 6.5 ounces. Access time is rated at under 20 milliseconds. Seagate expects the drive to be available in the third quarter of this year.

The second addition to the Seagate stable, meanwhile, is the ST9038A, a 32MB version with broadly the same specifications apart from larger data capacity. It will be ready by autumn. ■

NEW MACS WILL PACK SERIOUS POWER

68040 microprocessor.

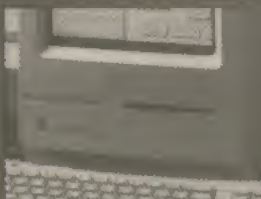
At a recent San Jose conference, top brass are reported to have stated that a tower Mac is in the pipeline and revealed that 24-bit colour would come as standard on the machine.

Also in the pipeline from Apple is a Mac Classic based on the 68030 microprocessor. That's good news for budget Mac users since the only way currently open to the low-end users is to either upgrade a budget Mac using a

third-party 68030 system card or shell out for a full 68030-based system.

You may ask 'do I need a 68030 microprocessor?' According to Apple it's not essential, but the company is interested in getting rid of old stock before it starts hyping the new machines.

The advent of System 7.0, however, means that a 68030 microprocessor is fast becoming as essential for serious Mac work as the 386 microprocessor is in the PC arena.



• Mac Classic 68030 power soon

Senior figures at Apple have promised that the next generation of Macs will feature the impressive and fast Motorola

RiseTime

Commodore

CDTVTM

INTERACTIVE
MULTIMEDIA



CDTV (COMMODORE DYNAMIC TOTAL VISION)



CDTV is a revolutionary new concept in home entertainment and education. For the corporate market it is the most cost-effective multimedia delivery platform available. It is the first product of its kind to fully exploit interactive CD-ROM (compact disc read only memory) technology for a leisure-orientated medium, and features incredible sound and graphics capabilities. The multimedia CDTV player combines a professional CD audio system, advanced Amiga technology and infra-red remote control to offer a huge range of interactive applications, from games, music, gardening and personal health to challenging educational discs for any level, in addition to high quality audio CD reproduction. CDTV is easy to use (it simply connects to your television) and gives you total control over what you see and hear, offering you the chance to learn new skills and discover hidden talents.



CDTV Demonstrations at:

19 Quarry Hill Road, Tonbridge, Kent TN9 2RN

Tel: 0732 351234 Fax: 770234

Come and see CDTV.

We are taking orders now.

Special introductory offer price

£599.99

SAE for details



CIRCUIT CITY

Choosing whether to buy a PC or an ST used to be a difficult decision. Keith Pomfret looks at a PC emulator board for the ST that gives you the best of both worlds.

The Vortex ATonce is a hardware PC emulator for the Atari ST that allows the ST to emulate an IBM AT style PC and run PC software. There are two versions of the ATonce. The original 8MHz version and a new 16MHz plus version with the ability to display in mono VGA. The ATonce will run on any 520, 1040, 1040STE or MEGA ST, but a bold warning in the manual suggests that the installation should only be undertaken by Vortex or an authorised distributor.

The installation includes a very delicate soldering job directly attaching a socket for the ATonce board to the legs of the 68000 central processor. As there are 64 legs and they're all very close together, it is a job just begging to kill your computer if you're not competent.

HOT STUFF

The ATonce carton contained an ATonce board, 64-pin DIL socket, a manual and system disk. The hardware is protected by an anti-static bag and the manual warns that an anti-static workplace is necessary to do the job. This is because the ATonce contains CMOS components which can be permanently damaged by the static electricity which builds up in the human body.

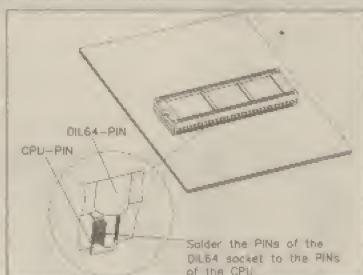
The manual further suggests that the person undertaking the installation be grounded against electrostatic charges using special wrist bands. The manual is intended for installation and to be a general reference document. For those who want a fuller reference, the ATonce technical manual is available from Vortex.

Before starting with the hardware side of the upgrade, it's necessary to make a copy of the ATonce system disk, then the ST should be unplugged and removed to a well lit and anti-static working area.

THE INSTALLATION

The ST should be disassembled according to the instructions for your model. With our 1040STFM, we followed the instructions to split the two halves and remove the keyboard. The metal shield within was tricky to remove as it involved twisting metal tags and removing screws. Once removed from the 1040, we needed to check which revision of the machine we had. Atari has made several versions of the 1040 - on some the STs 68000 central processor is in front of the disk drive, on others it is at the front under the keyboard to the left.

Our machine has the main processor under the keyboard and in order to make it fit, we cut away a section of the metal shielding and made sure that after installation it didn't touch the ATonce board. Insulating tape was used to mask the metal shield where it had been cut so it could not short circuit by the shield touch-



• Each of the 64 legs of the DIL socket must be carefully soldered to the 68000 processor on the ST's motherboard.

ing the ATonce. In other 1040s, it is necessary to remove the disk drive and dispense with one of the supporting legs to make room for it. Which ever model you have, it is covered individually in the manual.

STEADY HAND

When you've worked out where the 68000 processor is, it's time for one of the nastiest soldering jobs that we've taken on in a long time. The 64-pin DIL (dual in line) socket has to straddle the 68000 and its legs have to be individually soldered to the 68000s. The 68000 chip is a fraction over three inches long and in that length you have to solder two rows of 32 legs.

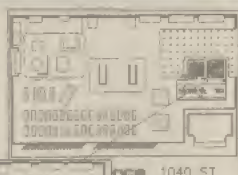
This soldering at around 10 joints to the inch takes intense concentration and the slightest slip could spell disaster. The 68000 is heat sensitive so if you're having difficulty persuading a joint to take, return to it after it has time to cool. Once it's in place you can insert the ATonce into the DIL socket being careful to align it in the way shown on the diagram in the manual.

Putting the ST back together is a reversal of the disassembly procedure and it's at this point that I disagree with the manual which recommends testing the machine without covers on. This should be avoided. To plug anything into the mains that has safety covers removed is stupid. Before it is plugged back in to test it, it should be re-assembled. When you've done this and you switch it on, it should boot as usual with the normal white screen. If it doesn't, something's wrong and you should switch the ST off and check everything.

ALMOST A PC

If the machine boots into the normal opening screen, you should put the ATonce system disk in. This will cause the ST to run the ATonce installer and then

• Two 1040s but the 68000 is in a different place. There are different instructions in the manual for each variant.



prompt you for a PC DOS disk. At this point you're ready to run PC programs on your ST.

In terms of performance, although the ATonce is a 286 based AT style emulator, it must still make some concessions to the ST's hardware and runs with a performance closer to an XT than an AT. However, all well behaved PC software that abides to the IBM programming rules (and doesn't make hardware calls directly) ran alright. Some of the screen refresh rates were slow, but this is normal for emulators.

All emulators are a compromise, but of all those tested, ATonce performed the best. The £199 price tag plus £34 if you want it professionally fitted and say £50 for the PC DOS brings the price to £283, only £16 cheaper than a PC XT clone we reviewed recently.

If you want a versatile ST, get the ATonce, if you want a PC spend the extra £16 and buy the real thing. ■

Vortex ATonce ST (8MHz) is distributed by Silica Shop on 081-309 1111 and costs £199 inc VAT. The faster running 16MHz AT Once Plus costs £229 inc VAT. Peripherals for it are adaptors for MEGA STs and STEs. The adaptors for the STE and Mega ST are £29.

If you don't feel confident to fit the ATonce yourself and would like this emulator in your PC without losing your warranty, Silica Shop will fit the ATonce or ATonce plus for £34 without affecting your warranty.

THE VERDICT

FOR

- ▲ Well specified hardware emulator that allows you to run industry standard PC software on the ST.
- ▲ Supports hard disks
- ▲ Well supported by distributor
- ▲ Works on all STs

AGAINST

- ▼ Not user installable unless you're a wirehead
- ▼ Delicate soldering could damage ST
- ▼ Most supported screen resolutions need mono monitor
- ▼ Adding ATonce to a new ST will kill the warranty

THOSE NECESSARY TOOLS OF THE SOLDERING TRADE

- Antistatic working area
- Medium cross head screwdriver
- Flat nosed pliers
- Metal shears
- Earthen electronic (or gas) soldering iron with very narrow tip

- Desoldering braid or pump
- Fine grade multicore solder
- Good lighting conditions
- Helping hands (sturdy metal base with crocodile clips attached).
- Don't work on any machine that

is plugged into the mains. 240v can and will deprive you of the rest of your life. It is good working practice to check everything on the bench before you start working to make sure that nothing is 'live'

Evesham Micros

All our prices include VAT at 17.5% and Delivery

ZY-FI amplified stereo speakers

GOT AN AMIGA, ATARI STE, ARCHIMEDES, SEGA MEGADRIVE, ATARI LYNX OR NINTENDO GAMEBOY? THEN GET THE FULL SOUND POTENTIAL WITH THIS PAIR OF FULL RANGE SPEAKERS!



ONLY £39.95 INCLUDING VAT AND DELIVERY

3 1/2" EXTERNAL FLOPPY DRIVES

Compatible with the ST or AMIGA

Very quiet • Slimline design • Cooling Vents • Sleek, high quality metal casing • Suits any Amiga or Atari ST • Full 1Mb Unformatted Capacity • Quality Sony / Citizen Drive Mechanism • Convenient On / Off switch on rear of drive • Long reach connection cable for location either side of computer

AMIGA VERSION ONLY £54.95

ATARI ST VERSION ONLY £59.95

TRUEMOUSE (ST or AMIGA)

WE GUARANTEE that this is the smoothest, most responsive and accurate replacement mouse you can buy for your Atari ST or Amiga. Excellent performance, amazing low price!

£17.95 SATISFACTION GUARANTEED

PHILIPS 15" TV/MONITOR

With its dedicated monitor input, this model combines the advantages of a high quality medium resolution colour monitor with the convenience of remote control. Teletext TV - at an excellent low price! NEW Version features dark glass screen for improved contrast, plus full range 3-way speaker sound output

£269.00 including VAT, delivery & cable

Philips CM8833 Mk.II including ST or Amiga cable... £249.00

PRINTERS ALL PRINTERS INCLUDE CABLE & 1 YEAR ON-SITE WARRANTY

Star LC10 best-selling 9-Pin PRINTER, 144/36cps... £159.00
Star LC 200 9-Pin Colour, 4 fonts, 180/45cps... £209.00
Star LC 24-10 24-Pin multifont, 180/60cps... £215.00
Star LC 24-200 24-Pin multifont, 200/67cps... £249.00
Star XB24-10 Professional 24-Pin Inc. COLOUR Upgrade... £365.00
Olivetti DM100S 9-Pin, includes 1 Year on-site maint... £115.00

olivetti DM124C 24-pin Professional Quality COLOUR printer

Professional Quality 24-Pin Colour Printing - At an affordable price!

Offering advanced COLOUR output with the superior quality of Olivetti 24-pin printing, the DM124C represents excellent value! Consistent high-quality is assured every time. Guaranteed Peace Of Mind, with 12 Months On-Site Warranty cover! 200 cps draft, 50 cps Quality • 7 Colour output; Graphics resolution 360 x 180dpi • Complete with cable, Colour Ribbon and 12 MONTHS ON-SITE WARRANTY
Olivetti DM124C Normal RRP: £369.95 inc VAT

SPECIAL OFFER! £269.00 including VAT and delivery

AMIGA SPECIAL DEALS

AMIGA 500 COMPUTER BASE PACK

Amiga 500 Base Package £307.40
A500 as above, with our 512K RAM/Clock Upgrade fitted..... £337.40
A500 Pack plus External 3 1/2" Drive..... £367.40
512K RAM/Clock Upgrade fitted..... £367.40
N.B. Does not include extra game software

Philips CM8833 Mk.II, inc cable £249.00
VIDI-Amiga inc VIDI-Chrome £110.95
VIDI-Chrome-Amiga colour splitter/adaptor £116.95
VIDI-RGB colour input splitter for VIDI £64.95
MVG-Genlock Adapter £95.00
CBM A500 20Mb Hard Disk £279.00

Buy an Amiga Feature Pack

From Evesham Micros AND YOU ALSO GET

THESE FABULOUS GAMES:

Trackball Manager 90 Subtitle DMC Riot
Block Attack Lost N Maze Olcman
Battle Squadron Java Tank Battle
Treasure Trap Nigel Mansell

PLUS! A wordprocessor and spreadsheet

N.B. Not supplied with A500 'Base Pack' offers

CLASS OF THE 90's Package £549.00
Class of the 90's plus 3 1/2" Ext. Drive £800.00
Amiga 1500 STARTER PACKAGE £949.00

CBM A500 Hard Disk, 40Mb SCSI Version £479.00
CBM A500 Hard Disk, 100Mb SCSI Version £669.00
A500 512K RAM Upgrade £131.95
A500 1MB RAM Upgrade £59.95
A500 2MB RAM Upgrade £99.95
A500 Replacement Power Supply Unit £39.95

Trackball (works with Amiga and ST) £29.95
Amiga Virus Protector £9.95
Stereo Sound Sengma inc. software £29.95
MIDI Interface £29.95
Golden Image Handy Scanner Package £179.00
Kickstart 1.3 Upgrade £29.95

ATARI

'KICK OFF' WITH THIS DEAL FROM Evesham Micros!

EVESHAM MICRO'S PRICE PROMISE - WE WILL BEAT ANY GENUINE ATARI ST PACKAGE OFFER ON A LIKE-FOR-LIKE BASIS

NEW! 520 STE 'DISCOVERY EXTRA PACK'

Special new package including the Atari STE, now available at a special new price! Includes the STE with 1Mb Drive, 512K RAM, full digital stereo sound, PLUS extra software including:

'Dragon's Breath' • 'Super Cycle' • 'Indiana Jones' • 'Anarchy' • 'Neochrome' • 'First BASIC' • 'Atari ST Tour'

520 STFM 'DISCOVERY PACK'

Pack includes 520STFM computer, plus STOS Games Creator (1) Outrun (1) Carrier Command (1) Bomb Jack (1) Space Harrier (1) Neochrome (1) First BASIC (1) Atari ST Tour (1) 'Discovering your Atari ST' Book

1040 STE 'FAMILY CURRICULUM PACK'

1040 STE including educational & productivity software: Educational Software modules, split into three age categories, from Early School to GCSE revision • Productivity Software featuring Wordprocessor, Database and Spreadsheet (RRP over £100) • Plus! Hyper Paint, Music Maker and First BASIC

SA1124 microchrome 16-bv monitor £129.95
Philips CM8833 Mk.II, inc cable £249.00
JoyStick Accessibility Adapter for ST's £4.95
Reference 40Mb SCSI Hard Disk inc PSU £349.00
Reference 100Mb SCSI Hard Disk inc PSU £499.00
Golden Image Handy Scanner Package £179.00
VIDI-ST & VIDI-Chrome video digitizer pack £99.95
VIDI-RGB colour input splitter for VIDI £64.95
Dual Cover - for any ST or MEGA £4.95

FREE! With EVERY ST Pack

* 'KICK OFF 2' • 'TRACKSUIT MANAGER' • 'SUBBUTOE' • 'FLIMBO'S QUEST' • QUICKSHOT 3 TURBO Joystick • 10 X 3.5" DS/DD DISKS • TOTAL RRP OF EXTRAS: OVER £115.00!

All our ST prices include P.D. where, inc. paint program, wordproc, games, graphics & sound demos, desk accessories and utilities.

£279.99 inc.VAT and delivery

ONLY £309.99 WITH 1MB RAM FITTED
ONLY £359.99 WITH 2MB RAM FITTED
ONLY £439.99 WITH 4MB RAM FITTED

£279.99 inc.VAT and delivery

ONLY £309.99 WITH 1MB RAM FITTED

£359.99 inc.VAT and delivery

ONLY £439.99 WITH 2MB RAM FITTED
ONLY £519.99 WITH 4MB RAM FITTED

AMIGA 500 512K RAM/CLOCK UPGRADE



Direct replacement for the A501 Expansion • Convenient ON/OFF RAM Switch • Auto-recharging battery-backed clock • Compact unit size • Ultra-quiet design

ONLY £32.95

Available without clock for £27.95

A500 1.5MB RAM EXPANSION (requires Kickstart 1.3) ... ONLY £89.95

Kickstart 1.3 upgrade available from us for only £29.95

LYNX Portable Games Console

Only £99.95 INCLUDES POWER SUPPLY & GAMECARD OF YOUR CHOICE!

Electric Golf £19.95
Finger Warrior £19.95
Saber Warrior £19.95
Zorro Marcano £19.95
Klax £19.95
Mx Pacman £19.95
Roadblasters £19.95
Roadblocks £19.95
Pacemaster £19.95
Cigarette Lighter Adapter £9.95
Sun Visor / Protector £9.95
Lynx Pouch £9.95
Lynx Kit Case £14.95

ST SIMMS RAM EXPANSION SYSTEM

✓ Fits Atari STFM or MEGA series machines
✓ Uses SIMMS RAM Modules for Effortless Upgradability
✓ Probably the neatest ST RAM Upgrade available!

RAM Upgrade (unpopulated) £59.95
RAM Upgrade With 512K RAM Installed - upgrades a 520 to a total of 1Mb RAM £89.95
RAM Upgrade With 2Mb RAM Installed - upgrades a 520/1040/Mega 1 to 2/2.5Mb £174.95
RAM Upgrade With 4Mb RAM Installed - upgrades a 520/1040/Mega ST to 4Mb £284.95

N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering

PLUG-IN SOLDERLESS ST RAM UPGRADES

Two versions allow upgrade to 1Mb, or 2/2.5Mb • Simple, fast and effective RAM upgrade path • Suits any 520 or 1040 ST model (not STE machines) • Requires no soldering or technical know-how

512K VERSION : UPGRADES ANY 520 ST TO 1MB RAM £69.95
2MB VERSION : UPGRADES ANY 520 or 1040 ST TO 2/2.5MB RAM £159.95

Evesham Micros

RETAIL SHOWROOMS

Unit 9 St. Richards Road
Evesham
Worce WR11 6XJ
Tel: 0386 - 765100
Fax: 0386 - 765354
Open Mon - Sat, 9.00 - 5.30

5 Gisson Road
Cambridge CB1 2HA
Tel: 0223 - 323808
Fax: 0223 - 327883
Open Mon - Sat, 9.30 - 6.00
IBM Dealer • Corporate Specialist

1762 Pershore Road
Cottbridge
Birmingham B30 3BH
Tel: 021 - 458 4564
Fax: 021-433 3825
Open Mon - Sat, 9.00 - 5.30

ALL PRICES INCLUDE VAT @ 17.5% AND DELIVERY
Same day despatch whenever possible Express Courier Delivery (UK Mainland Only) £5.00 extra

MAIL ORDER DEPARTMENT

Unit 9 St Richards Road, Evesham, Worcs WR11 6XJ
Call us now on 0386-765500
Lines open Mon-Sat, 9.00 - 5.30 Fax 0386-765354
Technical support (open Mon-Fri, 10.00 - 5.30) 0386-40303
Send an Order with Cheque, Postal Order or ACCESS/VISA card details. Please allow 5 working days for Personal Cheque clearance.
Government, Education and P.I.U. orders welcome
All products covered by 12 Months Warranty
All goods subject to availability, E & I.F.



TECH TIPS

Holding on to some terrific tips that other readers could use? Can't persuade your printer to perform? Getting in a muddle over your modem? Worry no longer. Write to Keith Pomfret, Tech Tips, New Computer Express, 30 Monmouth Street, Bath BA1 2BW.

HELP Canon Fodder

I recently purchased a Canon BJ-10e printer which I am using with Atari STE and Cambridge Z88 computers.

When printing out from Pipedream on the Z88 the top line of print is out of alignment with the rest of the printed text, despite being lined up correctly on the Z88 screen.

I get round this by inserting a "blank line" at line one before printing, but I wonder if there is an adjustment I can make to the printer driver instead. Can you help please?

Do you know of a suitable printer driver for Easy Draw? This is the only Atari program I am unable to use with the Canon bubble jet.

Peter Dickie, Edinburgh.

The best place to get printer drivers and 'tweaks' for printer drivers is a good established PD library where the librarian knows the machine and has a web of contacts throughout the machine specific world. Most of the utility and application problems that people have will have been encountered before and

the PD libraries tend to operate a loose forum in which problems are bashed around and programs and solutions are usually found.

For the Atari ST you could do a lot worse than to contact Goodman PD in the potteries. Mike Goodman runs a PD and Shareware library and regularly publishes a catalogue of his wares that includes news and reviews of the ST PD world. The Goodman PD library can be contacted at 16 Conrad Close, Meir Hay Estate, Longton Stoke-on-Trent. If you've a query you could give their enquiry line a ring on 0782 335650.

HELP Dumb modem

You are my last hope of sorting out a problem I have with a modem that I received free gratis, but without manuals or other info.

Anyway, I have connected it to my Amiga 500 with a RS232 cable (I think!) the pin layout below is what I have used.

Male	Female
2	2
3	3
5	5
6	6
7	7

8	8
20	20
22	22

These have come from the Amiga manual, but I am not sure if they are right. I am using NComm 1.9 (enclosed) but when I dial, the machine comes up with "Modem not responding".

Could you please tell me what I am doing wrong as it is a shame to scrap a good modem.

Andy Reeves, Rotherham.

There's nothing wrong with NComm so we must assume that it's either your cable, Amiga or modem. Test the cable for continuity using a multimeter.

Assuming that it tests out OK try it on another Amiga/modem combination that is known to work. If that's OK and it's not the cable, check the Amiga by trying a modem/lead combination that's known to work.

If the Amiga checks out as OK, the problem is with the modem. As I'm not sure which modem you're using, I can't give you any specific advice as to procedure in making it work but here's a bit of general advice. If it's an automatic modem try typing AT and hitting the Return key.

This should bring the response 'OK'

if your modem is 'Hayes' compatible. Hayes compatibility is the industry standard for automatic modems. If this doesn't work and there are various switches and controls on the modem, try the various possible combinations of the switches while attempting to connect with an on-line service.

The sort of controls that you can expect to find on a manual modem are answer/originate, baud rate and on-line. To dial up a service you should pick an appropriate baud rate for that service, select originate and manually dial the number. When it answers and you hear the modem 'squel' on the phone, select the on-line control and then replace the phone. If all is well, you should get the log on screen from the remote service. If you get garbage on the screen, check that your baud rate and protocols are set correctly. (A good place to start is generally 1200/1200 baud rate and 8N1 for a protocol, set in the software.)

HELP Hard driver

I have a problem getting my printer to work with my AS500. The printer is an Olivetti JP101 - what driver does it need? Olivetti cannot (won't) help me. It didn't come with a manual so I cannot even use a PD Driver Creator because I do not know the escape codes.

Andy Reeves, Rotherham.

According to Olivetti, the printer that you have supports the Epson standard so if you try installing the various Epson drivers in preferences (instructions on how to do this in the manual).

Try each of the Epson drivers (and any others that you fancy) until you get the one that gives the best result with your printer.

HELP GEM problem

I recently purchased a Trigen Model 88/8 from UK Home Computers and up to now have been very pleased with it. Shortly after buying it I bought an old copy of Finesse DTP (VER1.1 the AMS version), with this came GEM3. I had no problem in setting up, but lately I have come across a major problem, this is that the screen goes completely blank after only a short time in use (between 30 seconds and five minutes). This happens in the desktop and in Finesse and Psion's Gem Easel. The blanking is only reversible by a complete power shut off the system unit.

It also happens on a couple of PD games that I recently acquired. I have installed Gem more than once to make sure that the set-up is correct and is in Hercules graphics mode. Sometimes the screen does not clear at all and the remnants of the mouse pointer and menus are left on the screen until the system crashes completely.

Please help as I am a poor and broke A level student trying to do an A level in computer science.

Robin Clayton, Carlisle.



* You'll need to run a shareware utility before the Trigen PC will handle graphics applications like Finesse.

We spoke to Ron Gladwin at UK Home computers and he confirmed our suspicions. The computer that you bought wasn't intended as a graphics machine (as you need for DTP programs like Finesse). The display standard for the monitor and display is MDA. However, all is not lost. UK Home Computers have access to a shareware program that should allow you to set up your machine to run a mono emulation of the CGA graphics mode. Give them a ring on 0793 695034.

HELP Free Gift

Following your notice in Issue 128 I enclose a small program that I have written and wish to place in the Public Domain. I enclose listings where appropriate and have included some comments on the program below. If you run the program you will note that I have

described the game as charity-war. This means that whilst there is no obligation on anybody to do anything (as in true Public Domain), I have used the opportunity to advertise a very worthwhile local charity. If anyone feels that the game merits it I request a donation to my local RSPCA Animal Shelter.

The game is written in 5502 Assembly language using an assembler typed in from your 64 magazine in 1985. As the assembler can handle a maximum source code size of 23 K which results in an object code of around 4 K, the program is in the form of several small modules.

Richard Jones, Sheffield.

I've resisted the urge to print the entire listing as we wouldn't have enough pages in the magazine. However, we gratefully accept it for the Tech Tips proggy hole and look forward to seeing it up and running. Your charity donation idea is a fine and selfless gesture which I'm sure could benefit from a dose of organisation. May I suggest that you offer the program to a shareware library (The Express user groups section should help you to find one) with instructions that the shareware 'fee' should go to your choice of charity.

TIP: Laser patch

Unfortunately my tip regarding patching the Amiga Preferences HP LaserJet driver was printed wrongly in your magazine - one of the bytes was left out! Here are the bytes to look for and the changes to make as well as a detailed description of how to do so.

Original E5 90 D0 81
Patched E7 90 90 81

To do this using the Public Domain file editor NewZap load the driver by typing its full path name in the Filespec string gadget, eg, dh0:/devs/printers/hp_laserjet. In common with most other file editors NewZap displays two distinct window sections. The larger display depicts byte values in Hex while the smaller one displays corresponding ASCII characters, you can edit either by clicking the mouse within one of the sections and moving about with the cursor keys.

To get to sector 10 offset 15E, click on the upward pointing F arrow in the GOTO requestor and keep doing so until the Current Sector reads 10. Now click the left mouse button while the pointer is over the Hex editing window, Edit Mode should now read Hex. It only remains to locate offset 15E. This is located 11 lines down from the top, move the cursor there and

Using TV tuners, videos, NICAM boxes and other TV related equipment with computers can be confusing when the TV detector van calls. Here's one letter to try and clear the muddy waters...

HELP Keeping in tune

What is a TV receiver? For what it's worth, here is my opinion. My only qualification is some 40 years of radio as a hobby and licensed for about 25 years.

I would class any equipment as a TV for licence purposes as any equipment that is capable of receiving a TV signal and making use of the video content of that signal to provide a visible picture either at time of transmission or to store the video content for future use. I would class a single digitised frame of a TV picture as making use of the video content.

A colour licence I would consider needed if the equipment is capable of processing the video signal to provide RGB components and display these as a colour picture or store them for reproduction at a later date as a colour picture. Again I consider a digitised frame if

displayed or stored as RGB is charged as a colour receiver. A tuner providing composite video and RGB if only connected to a black and white monitor or storing only a single b & w digitised frame could be possibly classed as a b&w receiver. However if a colour monitor is also available it could be difficult to prove.

M Perry, Kidderminster.

I'm not sure that you're correct, but you're heading in the right direction. No doubt the chaps at the TV licensing office in Bristol will have something to add to the debate.



* When is a TV not a TV? No one seems to know for sure ...

press the right arrow key until the Cursor pos Indicator (top right) reads 15E - the byte under the cursor should be E7. Simply type in the new values as indicated above and select the save gadget when you are certain you have it right (there is an undo feature which can be used before the save if you mistype).

Anonymous

was just over four minutes in total (approx two mins in Pro Page and 2.5 mins from the CLI) on an Epson GQ5000 laser at 300dpi.

Ian Moran, Belfast.

At the risk of an almighty groan: "Thanks for the memory ..."

HELP Soldering on

Just a couple of questions that I would find most helpful if answered in your column.

- 1) With regards to the advice offered in Circuit City (Issue 130) about connecting the Amstrad monitor to the Amiga/ST. Does the advice refer to the colour monitor or the green screen? If it's colour what should be done with the 5V DC power cable?
- 2) Is there any way that an external cassette recorder can be connected to the CPC 464. I have tried unsuccessfully to solder an output and input jack to the circuit board connections or play and record head. Any help?

Matt, Milton Keynes.

- 1) It was the colour monitor and we did nothing with the DC power cable in case we wanted to use the monitor with a CPC again
- 2) No. It's a daft idea and you shouldn't have attempted it anyway. If the CPC tape is pooped, CPC Components in Preston should be able to supply replacement parts.

HELP Null modem

At home we have an Amiga 500 and our next door neighbour has an Atari ST. We both perform various offices in local committees and clubs and help each other with

typing and cataloguing.

About a year ago, we both bought a modem and comms software and used the serial port and our wonderful system X exchange to pass files across. committees and clubs have become busier and we can now spend up to two hours a day online.

Both machines stay on-line all the time and we've even installed dedicated phone lines and host software so that we can operate each other's machines remotely. My son pointed out that as both machines were in rooms backing on to each other (we both live in a pair of semis), maybe we could drill the wall or run a cable through the window frame and connect the modems back to back. This way we will cut down on the phone bills (and perhaps pay for the holes we have to have drilled by a tradesman).

Bill Saddler, Newcastle upon Tyne.

Your son is quite right when he reckons that you can save money with a direct link. You could be in for a greater saving than you think though.

The purpose of a modem is to MODulate and DEModulate the digital signals from the serial port into an audio signal that Telecom's lines can carry. (That's how it got the name modem).

For short distances by direct wire, the modems can be done away with and a simple cable can connect the machines through the wall. The cable that does this job is known as a null modem cable and can be purchased from most computer retailers for a few pounds. Assuming that you intend to keep the hole in the wall down to a minimum size, it will probably be a good idea to get the cable with its connector on one end only, pass it through the wall and then solder on the other connector. ■

KAO
TDK
KAO
MF2DD
 1Mb capacity

 OPENING HOURS
 Mon-Fri 9.30am-7.00pm
 Sat 9.30am-6.00pm
 Sun 10.00am-3pm

THE WORLD'S FINEST DISKS FROM T.D.K. & KAO SERIOUS QUALITY FOR SERIOUS USERS

	BRANDED BOXED IN 10'S WITH LABELS	KAO	TDK
3.5" MF2DD	125 100 DS/DO	£8.00	£7.00
3.5" MF2HD	125 100 DS/HD	£13.00	£10.00
3.5" MD2DD	96 100 DS/DO	£5.00	£3.00
3.5" MD2HD	96 100 DS/HD	£8.00	£10.00
KAO DISKARDO DISK WALLET CONTAINING 10 BRANDED MF2DD DISKS £10.00			
1 MEGABYTE	3.5" MF2DD BULK 50p each or	50	100
2 MEGABYTE	3.5" MF2HD BULK 75p each or	£24.00	£45.00
	KAO MF2DD BULK DISCS 5 COLOURS: BLUE, GREY, RED, YELLOW, GREEN, BLACK, ORANGE, FOG WHITE	£35.00	£68.00

(PURCHASERS OF 100+ DISKS. WE WILL INCLUDE A FREE 3.5" DISK DRIVE CLEANING KIT).
 All above disks are 100% error free & warranted free from defects & as such carry a 1 for 1 guarantee.
 POSSO BOX 3.5" +5.25" ONLY £14.00 EACH.
 DISK BOXES 3.5" 40 Cap 14 3.5" 80 Cap 15. 5.25" 50 Cap 14. 5.25" 100 Cap 15.
 STAR PRINTERS LC-10 Mono £185. LC-200 Colour £215. LC24-200 mono £285. LC24-200 col £390.
 HP DESKJET 500 ONLY £429. - All include FREE IBM printer lead.
 NB All prices inc. VAT with FREE postage & packing on orders over £50.00. Under £50 please add P&P at £3.00.
 Overnight delivery £8.00 extra.
K.C. VIDEO, 8 & 10 DONCASTER ROAD, SOUTH ELMSTALL, NR. PONTERFRACT, WEST YORKS. WF9 2YZ
TEL: (0977) 849100 FAX: (0977) 843312



ST

ATARI 1040STF and Hi-Res Mono Monitor with Microsoft Write word processor, Flair Paint, organiser, ST Basic, First Word, Will, not work with TV, hence no split. £360. Phone 0275 375496, evenings.

ATARI 5295STFM, 1 meg Discovery pack, also £300 + games + word processor, Epson Daisy Wheel Printer + sheet feeder, 3 stick + mouse, + 12MB utilities. Price: £300 the lot o.n.o. Split £250-550. Ring 0323 22012 (weekends/afternoons).

ATARI 520STFM games, books, magazines, joysticks, ST Basic, GFA Compiler, Hi-Soft, Assembler, Neochrome Three, Word processors, Raytrace, Anti-ST spreadsheet. Speech software, lots of PD software. £250 o.n.o. 071 473 1904.

TESTBOOM LTD Tel: 0695 571605
Fax: 0695 517606
286 from £650. 386 from £850
STE's POA Atari TT's POA Mega STE's POA

ATARI STM, 1 meg RAM, twin 1 meg drives + some software £320. ST colour monitor £70. Tel 071 586 6155 eves.

ATARI STE, one meg. Guaranteed until July 20 + cover disks and magazines. Loads of PD games, midi etc. Plus 14" colour TV. Absolute bargain at £295. Tel. (0706) 847613 quick!

ATARI ST one meg upgrade, two one meg drives 1084 colour monitor, 40 original games, many magazines with disks ST User, Format, etc. £380 o.n.o. Several joysticks. Tel: 081 501 2820.

FOR SALE external Atari ST 1 meg 3.5" disk drive, 1 month old, boxed with manual £45 o.n.o. Chris (051) 521 5633, after 4pm.

4 MEG STE, CM8833, colour JET 132. EXT 1 meg Triangle, clock, Naksha, 350 + disks, serious + menus, 6 boxes, 150 magazines, leads, nearest offer of £950 takes away. Phone 0202 420682. Move forces sale.

ATARI 1040 STE 4 meg £399, 48 magazines (ST World, ST Format and ST User), £10. Pace Linnet Modem, £90. Phone Andy (0435) 882121.

ATARI 1040STFM 40Mb hard drive, clock, mono monitor, 1Mb external drive, Hi-Soft Basic saved! Neo Desk 3, Timeworks DTP, FirstWordX, K-Data, Cadaverh, boxed as new with documentation £700 o.n.o. Watford 268873.

ATARI 520 STFM 1 meg drive, plus software, incl F19, Timeworks, Wordwriter wp, joystick, disk box etc. £250. All very good condition. Tel: 0582 666054 (Luton). After 6pm.

ATARI 520 STFM, one meg internal drive, one meg external drive, loads of magazines with cover disks, £700 + software, mouse, joystick, plus extras. 14 months old, mint condition. £330. Tel: 051 327 2616.

ST GAMES for sale. Please send SAE for list: Les Bassant, 188 Brinkburn Avenue, Gateshead, Tyne and Wear, NE8 43X. I can also offer help with Sozobon C and Gulham.

ATARI ST/STE PD, + Sten issue 3, DTP, WP, Art and Clip Art only. Disk catalogue issue 2.1 out now. Send disk + SAE to: Typetcast PDL, 31 Hartfield Crescent, West Wickham, Kent. Disk + SAE for Sten issue 3.

STE SIMMS for sale upgrade 520STE to 1 meg. Phone Willie (Flat 3) on 041 339 8175 after 6

VARIOUS Atari ST software. Send SAE for list. (Includes FSP Wordup Jackson!). To Antony Cleall, Eastmere House, Eastergate Lane, West Sussex PO20 6S. All originals and boxed.

ATARI 520STFM 1/2 meg drive and memory. Boot switch fitted, comes with over £180 of software. Excellent condition, £150. Wanted. Telephone Paul on (041) 429 5829. (Glasgow).

ATARI 520 STE, with joysticks, magazines + lots of original software, inc 25 games, Hyperpaint, STOS, P.D. etc. Good condition with manuals. Sell for £275. Phone 0369 4980. Ask for Liam.

MASTERSOUND sampler for the ST. hardware, cable, manual and 2 free demos. Boxed and in perfect condition. £30. inc p+p or swap for Amos. Tel: Rich on 0272 843241.

FOR SALE! Atari 520STFM with double sided drive, all leads, mouse, joystick, £450+ games etc. All for only £275 quick sale needed. Call Karl (after 6pm) on (0293) 871438. Can organise deliveries if required.

ST GAMES for sale. Altered Beast. Kick Off, all £5. Write to lee Wheelhouse, 1 Stafford Avenue, Costessey, Norwich, NR5 0QF.

ATARI STFM hard drive wanted. Pay up to £200 cash. Phone Steve on Portsmouth. (0705) 691384 with details after 6pm.

WANTED + disk drive interface, swap Turbo Dizer Digitiser for ST. Flat 119 Mount Pleasant, Bracknell, Berks, KG12 3HS. Tel: 0344 868146. leave message on answer phone.

ATARI laser £599, 60Mb hard disk £399, mono monitor £75. 081 590 4448.

ROBOT MATHS (6-9 year olds)

Two programs in one! Only for the ST!
 Designed to teach your child multiplication in a fun and friendly way, and then to let them try out their new skills. **Only £4.99**

SHOESTRING SOFTWARE
78 CARMARTHEN RD., SWANSEA, SA1 1HS
PLEASE SEND FOR FREE CATALOGUE

20MB HARD DRIVE for the Atari ST. desperately required. Must be perfect with no faulty sectors. £100 maximum can be paid. Haywood Milton Jnr. 051 724 4847, after 7pm weekdays only.

TRIPLE X PD. Adult Public Domain for your ST. For free catalogue send SAE to: Babak Ghazi, 3 Lansdowne, Carlton Drive, Putney, London SW15 2BY. Send us lists of your ST Adult/humour/violent PD!

PROGRAMS, games for ST, for sale. Also blank disks, 50 wanted for 19.50 plus 2.50 postage. Wanted! Filofax paper for printer at a reasonable price please! Swap PD programs, clip arts etc. Write: 3 'Crossfields' Station Terr, Dowlais Top Merthyr Tydfil. CF48 3PU.

ATARI 520 STFM with games, £160. Also Star LC-10C colour printer with cable £160. Both in immaculate condition. Tel: (0269) 845826. Ask for Nial (S. Wales).

PUBLIC DOMAIN, over 400 top quality disks for the Atari ST/STE. Send 50p and SAE for disk catalogue and free PD to: N. Klee, Jennix PD, 66 Abbey Road, Strood, Kent, ME2 3QB. Disks available from 90p each.

JENNIX PD (formerly Riverview PDS) would like to apologise to anybody who confused our name with Riverdene PDL. We have since changed name and now sell (90p each), swap and buy ST-PD. Call (Nick) 0634 723659.

ATARI mega 1st 20 meg hard disk second drive Lattice (Neo Desk 3) Devpac ST 1st Word Plus Falcon and lots more books, magazines. Boxed, all for £550. Leon on 0831 802 184.

ATARI mega 4 with At-Speed and QL emulators. Over 150 disks, magazines and guide books. Best offers over £900 will secure this great outfit. Tel: 081 889 4276 Tottenham. Have upgraded.

WANTED FOR CASH
 We buy/sell P/X & repair IBM's, Amiga, ST, etc. Working or not.
DMR Electronics
0274 817889 or 881308

ATARI 520 STFM, second disk drive, multiface, joysticks, mouse. Well over £1,000's worth of software including. Captivo, Cadaver, Dungeon Master. Sell for £250 o.n.o. Tel: Paul 0709 898780.

DTP/WP art + clip art PD software for Atari ST/STE. Catalogue 2.2 out now. No games! Send disk + SAE to: typetcast PDL, 31 Hartfield Crescent, West Wickham, Kent, BR4 9DW. No VAT on PD from typetcast PDL.

ATARI 520STFM 1 meg memory disk drive, games including Captain Blood, Hard Driving, STOS, joystick, mouse manuals, lots of PD, ST User magazines and disks. £250. Tel: Colin 031 441 7764 (evenings).

WANTED: disk drive for ST. Must be double sided and preferably Atari or Cumana with power pack. Must be external! Offers under £30. Phone (03302) 2435 weekdays, between 6-9.30.

520 STFM with software including 1st Wordplus and Superbase Personal 2. £200. SM124 monitor £75 Star LC10 £75 or the lot for £320. Phone 081 556 0884 after 8pm weekdays or anytime weekends.

VIDI ST, video digitiser for the Atari ST complete with software and leads. Suitable for use with any video that has a Scaf socket. Worth £90. Will sell for £40. Mint condition. Steven Howlett, 1 Solva Road, Claise, Swansea, S06 7NX.

MIDI COURSES
 at The School of Audio Engineering
 • Basic/Intermediate/Advanced levels
 • Commencing June/July
 • 15 colleges worldwide

School of Audio Engineering
RING FOR FREE BROCHURE
071 609 2653
 School of Audio Engineering, St. Marks Chillingworth Road, London N7

ATARI ST system clear out, mega 4, 1040, hard disks 20, 30, 43, 65 meg 155 meg tape streamer, Plotter HPGL, memory upgrade, Hi-res monitor, colour monitor, 24Pin colour printer, graphics tablet, TOS 1.4 Xerox 4020 Ink Jet printer.(0495) 272092.

FOR SALE ST/E original software with manuals, games: Aaargh, Gretskey's Hockey, Formula 1 Grand Prix, Skweek, £10 each, Borodino £12, K-Spread 3 £45, ST Basic £10, Phone Ronen Nouril, (091) 455 0875.

◆ AMIGA

AMIGA A500, A501 RAM, second drive, mouse switch, mat cover, bracket, £370 CBM A590 20Mb hard drive, 1Mb RAM, 10+ Mb utilities, PSU, boxed £350. Philips TV tuner for monitor, £50. All leads, manuals. Neil 051 426 0138.

VIDI Amiga plus Vidi Chrome Digitizing hardware and software. All boxed in mint condition £80 o.n.o. Tel (0925) 225422, after 6pm. Paul.

WANTED. Cheap copy of Chuckle Egg for Amiga. Tel:0285 651682, between 2-5pm.

FOR SALE: half meg memory expansion for Amiga 500. Includes battery backed clock and calendar and full fitting instructions. £25, first come, first served! Write to: Adam Wright, 33 Great Holme Court, Thorplands, Northampton, NN3 1YD.

AMIGA PD software, educational, demos, music, horror, sound samples, utilities etc. 80p per disk. Catalogue disk with free PD and original software from 50p-80p. Chris Jackman, 3 Albion Terrace, Lexham Road, Litcham, Kings Lynn, Norfolk, PE32 2QQ.

N.B.P.D.L.

37 Basford Road, Old Basford, Nottingham, NG6 0JC
V.A.T. Registration Number 567 915985

Ten blank disks free with orders over £16.00

GAMES DISKS - Wacko Jnr In Wonderland • Mechlight • Wobbler & Diamond Fever • Flaschbier • Pseudo Cop • Dragons Cave • Zenon III • Blizzard • Battleforce

MUSIC - Deadly Jammin • Jerry Lee Lewis • Genesis

UTILS - Scroll Text Editor • Boot Intro Disk • Icon Mania • XCopy III • Master Virus Killer • Dark Star Utils 4 • Arioch Utilities • Jr. Comm

VARIOUS - Rim 5 Database • Micro Fiche Filer • PMC Fractal Mega Pack • Night Breed Slideshow

Tractor feed disk labels 1,000 for £12.00

All PD disks £2.00 each inclusive P&P V.A.T.

One free with every ten on same order.

Please add 50p per disk for Air Mail orders

Catalogue disk only 70p incl. P&P V.A.T. Licensed for Amos Ware.

All cheques etc. payable to Mr. N Berridge

ARKADIUM

P.O. BOX 15, NORMANTON,
WEST YORKS. WF6 2YR.

ALL PRICES INCLUDE
VAT AND POSTAGE

SEGA MEGADRIVE

OFFICIAL UK MEGADRIVES
WITH CONTROL PAD AND FREE GAME.

R.R.P. £169.99

ARKADIUM
PRICE

£139.99

Populous.....£37.99
Zany Golf.....£37.99
ESWAT.....£32.99
John Maddens
(US) Football.....£37.99
PGA Tour Golf.....£37.99
Sword of
Vermillion.....£46.99
James Pond.....£37.99
Zoom.....£27.99

AMIGA A590 hard drive, 2 months old. Boxed as new with 512K upgrade. Fitted £230. Tel Andy. (Derby) 0332 372787.

WANTED. Amiga A500 +1/2 meg, 2nd drive + s/w. Will swap Super Famicom + Gradius III (Scart), also game gear. (no games) £85, both brand new. Please ring 0924 402430 or 407919. Ask for Steven.

COMMODORE Amiga, 1 meg, Cumana 2nd drive, prowrite, programs manual, worth £150+ loads of games, 2 joysticks, disks, Synco Express 2. All worth £1200+. Sell for £600. Call Ian on 081 866 7152. NW London.

A590 20Mb hard drive, including 1Mb of RAM £295 o.n.o. Wanted XT bridge board. Ring (061) 881 5663.

AMIGA games, Drakkhen, Treble Champions, £5 each. Edition one compilation £8. All boxed. Back issues N.G.E., Amiga computing, Amiga user etc. 65p-£1.10 includes postage. 0703 676949, after 6.30pm.

AMIGA Agnus 8371 chip £15. Kickstart 1.2 chip £10. Mouse and Tracy £10 + p+p. No offers. Tel Viper 0473 713715, between 6-9pm only. Hello to Myself.

AMIGA 500/2000 acceleration board 68020 processor, 1Mb RAM (32bit) - 16MHz max speed. 8 mips, as new. Ring Barry on 0642 252133 £350 o.n.o.

A1000 12000 Comcen 2Mb RAM expansion, fully populated with battery back up clock. Boxed as new with utilities disk, £150 o.n.o. Simon 0803 812452. Also contacts wanted on Amiga and 30 original games for sale.

AMIGA games, Drakkhen, Treble Champions, £5 each. Edition one compilation £8. All boxed. Back issues N.G.E., Amiga computing, Amiga user etc. 65p-£1.10 includes postage. 0703 676949, after 6.30pm.

AMIGA Agnus 8371 chip £15. Kickstart 1.2 chip £10. Mouse and Tracy £10 + p+p. No offers. Tel Viper 0473 713715, between 6-9pm only. Hello to Myself.

AMIGA wanted, very good condition. Will swap Yamaha keyboard worth £150 plus Toshiba walkman worth £45. Tel: 804 9293 (081).

AMIGA A500 with modulator, box, manuals and software. All in excellent condition £299. Telephone (0495) 272358. Also Rank Xerox 4020 colour inkjet printer. New and boxed. Cost £1700. 5 months ago. Sensible offers please. Tel 0495 272358

A500 upgraded 1 meg nine months old. £200 + software, 3 joysticks, mouse, mat software includes, Captive Infestation etc. Tel: 0484 720353. Ask for Kevin.

COMPLETE KIT! Amiga 500, with 1Mb RAM 2nd drive plus Archimedes monitor, also original software £595 o.n.o. Also Atari STFm unboxed new £160 o.n.o. Also Amstrad PC 1512 DMM with Taxan printer £345 o.n.o. (0865) 790632, after 6pm please. (Oxford).

AMIGA A500 memory expansion, second disk drive. Lots of games. Amiga Format magazines and disks adult used only. Still £350. Very good condition. Phone after six. 0405 720368.

AMIGA PD utility disks 170+ disks, full of programs, art, music, games spreadsheet printers, you name it and I've got it! SAE to J Murray, 9 Palace St, Ighitehill, Burnley, Lancs, BB12 6EA.

AMIGA A500 1meg includes joystick, mouse, mat, modulator, magazines, extension lead, many games including Speedball 2, Chaos Strikes Back, Dungeon Master. Kick Off series and others. All excellent condition. Worth over £750. Sell £450. Phone 081 870 9965.

AMIGA A500, A501 RAM, second drive, mouse switch, mat cover, bracket, £370 CBM A590 20Mb hard drive, 1Mb RAM, 10+ Mb utilities, PSU, boxed £350. Philips TV tuner for monitor, £50. All leads, manuals. Neil 051 426 0138.

AMIGA A590 hard drive, 2 months old. Boxed as new with 512K upgrade. Fitted £230. Tel Andy. (Derby) 0332 372787.

WANTED

USE YOUR VOICE
TO OUTDRAW THE
GUNFIGHTER
CASH PRIZES
0898 31 35 94

INFODIAL POBox 36 LS1 4TN Call charges 34p Per Min Cheap 45p Per Min All Other Times

Let this advertising
space work for YOU!!
For Only £61

Contact Tim Partridge
on
0225 442244

AMIGA "Class Of The 90's" pack. Unwanted prize so full warranty £420. Tel: 0372 277887 (Surrey). Ask for Richard.

AMIGA Fanzine (with cover disk) Amoeba quarterly. Send SAE to 369, Winstead Park Road, Ilford, Essex, IG1 3TT. For free details!

AMIGA ORIGINALS, unboxed, some good games. Nightbreed, Barbarian, Total Recall plus others. Low prices send SAE to 8 Paisley House, Kershaw St, Laistkroyk, Bradford. Every reply answered.

TEN disks o Amiga PD, clip art, IFF Format, suitable for DPaint etc. All disks are totally full and virus free. Quality media. £7.50 (0636) 71275 or write to: 96 Charles Street, Newark, Notts. NG24 1RL.

AMIGA 1000 for sale, mouse, separate keyboard with excellent colour stereo. Amiga monitor worth £300. All for £380 o.n.o. Amiga has 512K. Please contact (0705) 467756, Hants.

◆ PC

AMSTRAD PPC 6400 portable PC. As new, original disks and manuals. £375. Tel: 0252 617915 (Hants).

VERY cheap PC spares. 1 Seagate 40Mb hard drive, 1 386sx motherboard, 1 oak, 168BIT VGA card, 1 Ctek compact multi 1/0 20 1Mb Y9 Smm modules. For prices please call 0279 417345 after 6.30pm.

COMPUTERS

For probably the best prices and deals on Home and Business Computers, Acorn, Archimedes, Alan ST's, Lynx, Commodore 64's, Amiga's, Amstrad, Star, Citizen, Canon, Panasonic, Sega, Nintendo Consoles. Plus printers, disk drives, monitors, memory upgrades and accessories etc. Great deals on PCs.

* FAX M/C's * ANSWER M/C's * PHONES *
Joysticks from £4.99. Blank disks 5 25", 3 5", 3"



SGM ELECTRONICS

19 Charles Street, Wigan, Lancs, WNT 2BP

Tel: (0942) 321435 Fax: (0942) 821273

Mon-Thurs 11.00am - 9.00pm

Fri - Sat 11.00am - 7.00pm or later

Repairs to most makes of computers.

ST REPAIRS AND MEMORY UPGRADES

ANALOG
ANALOGIC
LOGIC

REPAIRS without diagnostic fees

520/1040 (ST/M/STE)..... **FIXED CHARGES, FAST TURNAROUND**59.95

POWER SUPPLIES

ST/M/STE Power supplies..... **Service exchange with 1 year guarantee**49.95

MEMORY UPGRADES

1. 520 ST/ST/M/ST/ST/M to 1Mb59.95
2. 520 ST/ST/M/ST/ST/M to 2.5Mb159.95
3. 520 STE to 1M (DIT) kit29.95
4. 520 STE to 2M (DIT) kit89.95
5. 520 STE to 4M (DIT) kit169.95

* We specialise in surface mount chips

MEMORY CHIPS FOR YOUR ST AT LOW LOW PRICES

16 x 256K x 1 Bit29.95 16 x 1Mb x 1 Bit89.95
* WE STOCK FRONTIER SOFTWARE MEMORY UPGRADES



ANALOGIC COMPUTERS (UK) LTD

152 Latchmere Road,
Kingston-Upon-Thames,
Surrey, KT2 5TU

Telephone: 9am-9pm

Tel: 081-546-9575

Tel/Fax: 081-546-4671

AMSTRAD PC1640 mono double drive with software games etc. Phone Bedford (0234) 214663 £400.

AMSTRAD 1640 30 meg hard drive, ECG EGA colour monitor, brand new, boxed £550 o.n.o. Phone Gordon 0255 780608.

EPSON PC (IBM COMPATIBLE), 20Mb hard disk, user pack, 3 months old, plus Olivetti DM100 printer (still with 3 months on-site warranty). All boxed as new, must sell hence £580. Phone (0795) 872280.

VINE MICROS PCTV to Scart adaptor CGA or EGA versions £15 each. 12v power supply £5. B. Walton. 091 2372 329.

AMSTRAD 1640 ega colour monitor 30 meg hard disk 51/4 Fdisk as new £600 o.n.o. Plus p+p. 37 Devon Place, Newport, Gwent, NP9 4NW. Tel: 0633 259847.

PARALLEL to serial converter. Use Serial printer etc from parallel port. With Gender changer and 5 metre serial cable £40. Including postage. Phone 0543 372341. 9-5pm. Ask for Mr. Timbrell. Cleaning other PC bits.

AMSTRAD PC2086 VGA display 30Mb hard disk 31/2" floppy. Loadsa software, mega bargain at £550 o.n.o. Contact Lee. Eves and weekends on 081 519 8568.

AMSTRAD PC1512 colour, 2x 51/4" floppies, 32Mb hard drive installed with Dos 3.3, software and logtech menu, logtech upgrade mouse. S/w includes Supercalc 3. Buyer must collect. Phone (0753) 216500. Ask for David. Price: £550 o.n.o.

1640 AMSTRAD Isenstein expanded memory cars 2MG. E7S/LIM software. Working order £90. Sell due to upgrade to 386ST. Ring 0388 528308.

WANTED: Old IBM PC XT/AT, condition unimportant/repairable, PC compatible. Also considered. Can collect if necessary. Phone Mike. 0952 597137, after 6pm or w/ends.

286 AT 100% compatible. 2M6GS. RAM (Simms) 42 meg and 21 MBG hard drives. 1,2 and 1,44 floppies Boca RAM expansion board, Taxan 765 colour EGA monitor, mouse, software etc. £925 o.n.o. 0253 891517 (Blackpool).

AMSTRAD PPC 64000 portable, IBM compatible, twin 720K drives, PSU with leads, modem, carry case, software and manuals, plus external monitor. Phone (0748) 834014 (evenings/weekends).

◆ 8 BIT

AMSTRAD CPC 6128 and colour monitor with tape drive. Some software, joystick, manual. £240 o.n.o. Wynn Rees. Eves. 0962 712004.

FOR SALE. Amstrad CPC 464, with Light Gun, 250+ games, with word processing, software worth £800+. Sell £350 o.n.o. Tel: 081 574 4780

64C with loads of mega games inc Robocop 2, S.C.I. Creatures to name a few plus! Graphic and music packages and magazines. All in good condition for a bargain price of £180, buy it! Tel: 0831 323460.

BCPL Introducing BCPL is a comprehensive guide to the language on the Amstrad CPC, which covers all areas. For more details, send a SASE to David Wilson, 37 Crowder Close, Longley, Sheffield S57NW.

AMSTRAD CPC464 with disk drive, mono monitor, TV modulator, multiplay, 100+ games on tape disk, eg Rainbow Islands, Mini Office, many magazines, books, joystick, excellent condition. Bargain only £200. Phone after 6pm. (0480) 61253.

FOR SALE Atari 800XL computer and 1050 disk drive. All manuals and leads. Disk and cartridges cheap for quick sale. Will split or package. Telephone William on 08206 62777 9 to 5pm.

AMSTRAD CPC 464. stereo speakers, speech synthesizer, £350 worth of games, joystick, green monitor, TV modulator, manual and blank tapes, £190. Phone Blackburn, (0254) 668651.

SPECTRUM 48K, £4.50+ worth of software, two joysticks, datacarder, all worth well over £500. Will take £150 o.n.o. or swap for a colour monitor for PC. Contact me on (0945) 772870.

SPECTRUM +3 disk drive + tape recorder over £400 worth of software. All leads + manuals. Excellent condition. Everything worth over £600. Bargain price £180. Phone 0327 60351.

AMSTRAD CPC6128 with colour monitor, tape recorder and lead, lots of software including Trivial Pursuit, Art Studio, Pawn, Hitch Hikers, and many others. All originals everything as new. Cost £600. Will accept £250 o.n.o. Tel: 0742 680659.

SPECTRUM +2 with light gun, joystick and games. Phone 0734 303191. Will deliver Reading area, £90.

128K SPECTRUM with monitor, joysticks, printer interface, plus loads of games, £175. 22 Solway, East Tilbury, Essex. RM18 8RQ. Tel: 03752 4813.

COMMODORE 64C, fully boxed, great condition with £200+ worth of brilliant original software. Also include Quickshot II+ and (2N) tape deck, bargain price at £100. Tel: (0909) 566560 Dunnington, Sheffield, between 3.30pm and 9.30pm. Anyday.

AMSTRAD CPC software. All top titles for just £3 each. For full list, write to Wayne at 108 Bury Road, Radcliffe, Manchester, M26 9UX.

3H DISK DRIVE fits BBC, Amstrad £25. Amstrad PCW main board (new) £25. Amstrad 1512 main board, £30 Amstrad monitor/ power supply board £30. Tel 0522 750846.

AMSTRAD CPC 6128, colour, 3" disk drive, multiplay 2. tape recorder, computer desk, dust covers, 30 games + manual, leads, 2 years worth A.A. magazines, 20 disks. Offers around £375. Buyer collects. Tel: Dougie (0208) 814804, after 3pm.

AMSTRAD CPC464 green screen monitor, comes complete with printer, music machine, Light Pen, Mini Office software, and Quickshot joystick, plus over two hundred pounds worth of games. Bargain at only £200. Tel 021 784 0538. Calls after 5pm.

CBM+4 PSU, datacassette, manuals, 75+ software tapes. Bargain £80. VIC 20, PSU, datacassette manuals, 50+ software tapes. Bargain £45 o.n.o. Details Steve 081 517 6772, evenings.

GW BASIC

☆ Speed up your completed programs ☆
2 pence a line (£6 minimum) inc P&P

Send your disk(s) with a copy of your GW Basic program (any PC format) and payment to

Jackall Computing Limited

73 Lyndon Avenue, Blackfen, Sidcup, Kent, DA15 8RL

Enquirers 081-850-7258

A faster program or your money back! Scanning service available

AMSTRAD 6128 colour monitor and TV modulator, excellent condition. Plenty of disks games, tapes and magazines £250. Worth £500. For quick sale. Tel: 0978 820848

AMSTRAD 464, some games, Lightpen and graphics software, (Faulty) modem, no monitor or offer! Call John on (0232) 658939. Excellent condition. Boxed with manuals. Genuine reason for sale.

AMSTRAD CPC 6128, colour monitor, two joysticks, tape-patch leads, multiplay II + manuals, disk drive, £400 + software, hardware. Loads of multiplay cheats supplied. Phone York 0904 412799, after 6pm. Worth £1000+. will sell at bargain £400!

SPECTRUM 48K, all leads, PSU, £40. Spectrum 48K + all leads, PSU, £40. Spectrum 48K + all leads, psu, £60. Spectrum 128K printer, £20. VTX 5000 modem, £20. Microdrives £10 each. I/F one £25. Details Steve 081 517 6772, evenings.

ZX +2 with joystick and loads of games. £100 o.n.o. Tel: (0244) 818530. Ask for Richard.

FDI 3" second drive for CPC6128. £55 C/W lead. Evenings or weekends. Phone 03224-46340 or write to Mr. J. Emmerson, 16 Fremantle Road, Belvedere, Kent, DA17 6ES.

R.J. COMPUTERS

SPECIAL OFFERS!

Tweety Boards (stereo sound for the Atari STE)	LIMITED OFFER 31/2" disks from 41p each	Star LC10 £165
Drivemaster (switch between 2 external drives)	Atari 520 STE TurboPack £389	Star LC200 £235 (inc cables)
£12.50 each	520STFM Discovery Pack £279	Amiga A500 Screen Gears £69

We stock many items at competitive prices. Postage £5 large or £1 small items.

30 Westbourne Road, Downend, Bristol. Telephone 0272 566369

RE-RUN fanzine for the Spectrum, BBC and ZX81. Fifty pence incl p&p to 1 Northolme Close, Grays, Essex, RM16, 2NX. "A varied, amusing, unbraided, and rather nifty Fanzine Yours Sinclair, June 1991."

C64 ORIGINAL software auction, many titles for catalogue. Send SAE to Michael Valnola, 5 Woodside Cottages, Highwood, Chelmsford, Essex, CM1 3RD. Also wanted C16 + original software and hardware. Send list to above address for my best offer.

SPECTRUM disk system: +128K computer with Disciple interface (disk, printer, joystick ports) 3.5 inch drive, leads and disks. Hemel Hempstead. (0442) 60516. Phone evenings only and offer £120.

CPC6128, green with manual, tape lead, 3 blank disks, £140 more stuff in negotiation. Call (039 85) 438 or write, 2 Town Mead, Oakford, Devon, EX16 9EW.

COMMODORE 128 complete system. Disk drive, printer, datacassette, all with operators manuals, plus disk covers. Also loads of software (disks and tapes). Too much to list £350 for more details. Phone 0285 654886 quick sale. (Glos).

CBM 64, good condition, with new slimline base, complete with datacassette, power pack, manuals, joystick, joyball and £100 worth of software, £85 o.n.o. Contact Mark (021) 382 2634 after 4.30pm or write to: 57 King Road, Erdington, Birmingham, B23 7SN.

ALL DISKS

£1.50

STUPID FLOWER PD

All disks are of the sided variety, double.

Captain Golden Nugget Volume 1: 35 PD programs to dribble over on one disk only £1.50

See review in last weeks PD column

Send a blank disk for a mouth watering vast canyon-like disk catalogue to: **STUPID FLOWER PD, 3 Read Mead, Glastonbury, Somerset, BA6 8DN**

MEGADRIVE UK version, extra joypad, Japanese converter, four games, lots of magazines etc. £200. Phone (0734) 402870.

NEO GEO for sale £300 or swap for Super Famicom or PC Engine GT and game gear hand helds. Quick swap needed. Tel 0273 775291.

SUPER FAMICOM (Scart) plus two games unwanted gift £250 o.n.o. Phone Colin 051 605 0410.

SEGA MASTER system plus with Light Phaser, Hang on and safari Hunt includes two control pads £75 o.n.o. Tel: (0674) 74600.

NINTENDO Donkey Kong JR. One year old, like new. It's yours for just £12. Contact Richard (051) 678 8268.

PC ENGINE (PAL) 18 games (worth over £500) 4 player adaptor, joypads. £250 (boxed). Phone (0748) 834014 (after 6pm).

ATARI LYNX plus three games including Klax and Gauntlet, only three months old with PSU and two player lead. £130 call Simon on 0394 450733 for details.

PRINTERS

OKIMATE 20 colour printer (IBM) parallel output, boxed, software, two ribbons, £75. Tel: Woking (0483) 764857.

OKIMATE 20 colour printer, complete with paper ribbons, software and printer lead. Hardly used, excellent condition, £60 o.n.o. Tel: 0243 542917 Antony.

AMSTRAD LQ3500 printer. Hardly ever used. Good condition with box and Mini Office II, £170 o.n.o. Original disk cassettes top titles, for £150 o.n.o. Worth over £400. Ring 0245 491827 evenings.

COMMODORE MPS801/TER wanted. Reasonable price paid any education 51/4 disk wanted, not public domain. Reasonable price paid. Write to: 4 Mill St, Dolves Lane, Consett, Co. Durham, DH8 7AQ..

EPSON LQ1500 24 pin printer with sheet feed £225 plus postage. Tel: Newport (0633) 266647 evenings.

LASER printer, good condition, £475. Tel: 081 995 0316.

NEC P2200 2A PIN DMP. Good condition, boxed. Epson and IBM compatible. Sell or swap for ST hardware eg. Hard disk or supercharger. Any offers? Phone (0332) 367642.

CANON LBP4 laser printer 1 meg extra memory nearly new £625. Amstrad 1640 ECD. DD +30 megabyte hard card. Excellent condition £500. Phone 081 894 4324.

WANTED daisywheel type printer for A500 must be excellent condition. Cash Wating. Please Tel: (0782) 533016.

24 PIN printer canon A60g good condition. £100. Phone 031 443 0185 evenings.

CITIZEN 2 colour DMP Commodore compatible VIC20/64ETC. Also Binatone Upright data recorder, both as new. Offers welcome. Ring Graham 0602 625649.

BROTHER 1709, wide carriage printer. As new £199 plus p+p. 37 Devon Place, Newport, Gwent. NP9 4NW. Tel 0633 259847.

MONITORS

IBM enhanced colour daisy display (EGA) model No 5154. Very good condition £110 o.n.o. Phone Tony after 5pm on Southampton. (0703) 332307.

MONO monitor for Amstrad P.P.C. Sinclair S-12MM professional series with its own power supply. Hardly used. Very good condition, £50. I will post, if you pay postage. Tel Leeds (0532) 401575.

AUYA black and white monitor, plus Hercules card for PC. £60. Phone 081 657 0725.

MONO monitor for Amstrad CPC 464, £45 including postage and packaging. Tel: 0443 791 598.

MODEMS

SIM 2400 modem with Amiga lead and software. £100. Contact Chris (0283) 40053.

DUMB MODEM. 1200/1200 (half) 1200/75 (full) 300/300 full. Autodial/auto answer, with 25 way RS232. Ideal for new comms enthusiasts. Only £38 including modem, lead, Atari ST software and p+p. Call Nick any evening: 0634 723659.

SOFTWARE

SPECTRUM adventure and arcade adventure games for sale. All original prices from £1 to £2, or make me an offer. SAE for list to Simon. 127 Somerset Road, Knowle, Bristol, BS4 2JA.

WANTED Tomahawk 3" disk for Spectrum +3 computer. Phone Dover (0304) 202530.

WANTED "Amiga-Fax" hardware/software for Amiga 500 phone. (0726) 66919.

AMIGA games, magazines, demos, dozens of magazines, Robocop 2, Golden Axe, Super Monaco GP, Kick Off 2, demos: Lemming Shadow Dancer Gods etc. Worth £200. Sell for £105 or swap for 7 Gameboy games eg. W.W.F. Phone Simon 0909 731212.

AMIGA A1500

Genlocks = A8802 + Switch Box - £189

Switch box + lead - £43

You name it, we sell it!

AMIGA 500

£369

with 1 Meg of Ram



with
VideoStudio

without monitor £685

with monitor £935

0454 322994

We will part exchange a 500 for a 1500.

Secondhand 500's for sale. Call for price.



KRT VIDEO

71 Glenfall, Yate,
Bristol BS17 4LY

CONSOLES

COMM64 tape drive, disk drive 1541, monitor 1701. Joystick over £200. Disks and books. Mini Office II. Pools program and others plus extras. Quick sale £300 o.n.o. 0344 422307.

SPECTRUM + excellent condition, comes with two data recorders, television, £700 worth of software, interface, joystick, books, magazines, spare power supply and leads. Tons of disks, only £275. Phone 0908 643189.

SPECTRUM 48 in stonechip keyboard. Beep amplifier, on/off key. Load/save switch, small footprint. with 10 tapes £40. Call (039 85) 438 or write A. Jones, 2 Town Mead, Oakford, Devon, EX16 9EW.

ATARI Lynx for sale. California games and blue lightening cats! First £50. secures or will swap for Amiga hardware. Wanted HST modem. Cash waiting. Tel: 061 962 6377. Before 6pm. Voice after that on my BBS.

NINTENDO Nes Turtle pack, brand new, unopened. £60. Megadrive carts from £15. Phone 0403 61899 eves and weekends.

MEGADRIVE for sale, still has box, includes 5 top games, like Mickey Mouse and Groug £200. Phone Michael after 5.30pm on (0742) 335555.

FM STEREO ON THESE ST PRODUCTS

The Monster Stereo Cartridge£24.99

With the TCB-Tracker£35.00

Or with Wings of Death£35.00

(comes with free T-shirt)

Or all three for only£42.50

mph
COMPUTER
SPECIALISTS LTD

10 CHANDLERS COURT,
EATON, NORWICH,
NORFOLK, NR4 6EY
TEL: 0603 503382



ORIGINAL ST games: Midwinter, Space Quest III, £15 each. Millennium, Borodino, Corruption, Lancelot, Suspect, Powerdrome £10 each. Cheque/P.O. to Chris Conwell, Badger Inn, Church Minshull, Nantwich, Cheshire, CW5 6DY.

SHAREWARE for Windows, hundreds of titles, Games, screen utilities, disk, file, Memory utilities, Icon Editors etc. £1 disk +p+p. Send SAE for list. 37 Devon Place, Newport, Gwent, NP9 4NW. Tel: 0633 259847.

SWAP the great Hisoft C and C Breeze Editor for Devpac 2st. Also swap PC15 12DD for ST hard disk or other hardware (Phone). Also games for a resource editor, Phone Peter after 6pm on (0484) 865020.

AMIGA PD! I'll swap any of my 300 disks for two blanks, or trade PD for PD. Send blank for disk catalogue. David Hopkins, 23 Penmead Road, Delabole, Cornwall, PL33 9AT.

ATARI public domain software, hundreds of disks. Very large collection of music and midi software. Send SAE plus £1.00 for disk catalogue. 081 959 3438. Write to 153 Silkstream Road, Burnt Oak, Edgware, Middx, HA8 0DE.

AMIGA SOFTWARE (original only) Kick Off + Extra Time, Micropose Soccer, TV Sports Football, Millennium 2.2 plus lots more. Bargains from £2 - £8. Phone Steve on Portsmouth (0705) 691384.

FOR SALE Atari software family curriculum - G.C.S.E. Revision Module, Junior School Module, Play/Learn Module. Offers or will exchange for games. Miking considered. Tel: 0949 831206 Mike.

JAY-DEE'S PD for the Amiga, only 40p a disk for catalogue, demo's and games. Send disk and SAE to Jay-Dee's, 389 Scalby Road, Newby, Scarborough, North Yorkshire, YO12 6TG.

KICK OFF 2 with Final Whistle, £12. Precious Metal, £10. Amiga (Xenon II), £5. Balance Of Power 1990, £10. (IBM). All boxed as new. Kasparov Computer Chess game, value size, £10. Amiga joystick, £3. Refer Daryl Fareham, (0329) 235759.

GAMES wanted for Amiga user would also like word processor software. Mrs Angela Ohara, 41 Springmill Street, Bradford, BDS 7EE.

MAGAZINES for sale Express from Number onwards. Offers around £40. Ace 19 issues, 75p each. Zero numbers 1-20, £30. Various videos, also all excellent condition. Want details? Phone James. 0707 268374, between 4.15 and 5.30pm.

ATARI ST/STE power pack games. All originals. Outrun, Gauntlet, after burner, complete pack (Minus Double Dragon disk) in original case only £25. Call Nick any weekday, evening, after 7pm, on 0634 723659.

400 SHAREWARE disks to get rid of 51/4 25p each, plus postage some 31/2 50p. Ring 0404 891806. Also MFM, 20 meg hard disk £50. 7 200 watt PSU £30. Brand new many books at £2.

SAM COUPE game Famous Five, Five On A Treasure Island, for sale. Brand new, not used, £5. Phone 081 942 8758.

PC SHAREWARE Backpack Unprotect your favourite games and business programs, £1 per disk +p+p. Regular updates. Send SAE for list. 37 Devon Place, Newport, Gwent, NP9 4NW. Tel: 0633 259847.

PC SHAREWARE, £1 disk +p+p over 200Mb largest and best. Latest top Anglo American Titles. Best value, send 2 first class stamps for easy menu driven catalogue disk. 37 Devon Place, Newport, Gwent, NP9 4NW. 0633 259847.

SHAREWARE games for Windows 3. Checkers Breakout Tetris. Mastermind Noughts and Crosses, Poker etc. £1 disk +p+p. Send SAE for list. 37 Devon Place, Newport, Gwent, NP9 4NW. Tel: 0633 259847.

SHAREWARE Zephyr for PC. Powerful driven menu database generator. Faster than dbase with the power of Foxpro. Two disks £2 +p+p. Why pay more. 37 Devon Place, Newport, Gwent, NP9 4NW. Tel: 0633 259847.

C64 games galore! £1- £5. games like Batman, Untouchables, Operation Thunderbolt, Tape and disk. Also magazines, books, every issue of input. Interested? Send SAE to Stral, 4 Silver Firs, Newarthill, Motherwell, ML1 5TJ.

ST PD wanted to swap. Send list to Rick, 58 Hillside Road, Sudbury, Suffolk, CO10 6SA. Definite reply to all.

Atari ST Shareware

Serious about PD & Shareware?
Then the new Goodmans Spring/Summer International Shareware Guide is for you, and is available now.

Packed with reviews, screenshots and descriptions of all the latest titles, and as we now incorporate the Official STOS Shareware service, we also include the new STOS User Supplement, and our Exclusive Software Supplement.

For your copy send £1.95 to:
Goodman Enterprises, 16 Conrad Close, Meir
Hay Estate, Longton, Stoke-on-Trent. ST3 1SW
Tel: (0782) 335650 - Fax (0782) 316132

POOLMASTER pools predictor for Amstrad CPC (on tap) £12 including postage and packing. Tel: 0443 791 598.

POWERMONGER, Legend Of Faerghail £14 each. Xenomorph, demos Winter and Drakkhen £10 each. Also other games. All originals. Phone Paul on 0709 898780.

MUSIC-X midi sequencer and data/midi interface (1 in, 1 thru, 3 outs) £50. Also or T's Roland D-110 editor. £50. Tel Andy (051) 336 6657.

AMIGA PD over 300 titles 75p per disk including p+p. Send SAE, for list to Pete Smith, 10 Linden Rise, Bourne, Lincs, PE10 9TD.

AMIGA software: "A - Talk Plus" powerful comms package. Communicate with bulletin boards etc. Requires Amiga with 512K. Cost £80. New and boxed, only £25. Tel: 081 445 6144.

ATARI ST software (originals for sale. Ninja Remix, Voodoo Nightmare, Sporting Triangles, Altborne Ranger, Venos Flytrap, plus Mope. Bargains from £2 - £8. Phone Steve on Portsmouth (0705) 691384.

GO! some disks you want rid of? Then sell them to me! Second hand or new 3.5" disks only. Offers to Rich, 41 Pinner Park Gardens, Harrow, HA2 6LQ. May swap for my originals (games).

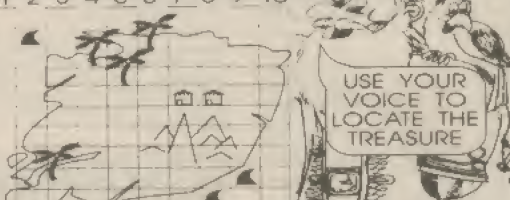
AMAZINGLY cheap, second hand, working, original games are available from Burmans PD. Also PD for 40p. Are you joined? If not, why not? Disk +stamped SAE to: Burmans PD, 41 Pinner Park Gardens, Harrow, Middx, HA2 6LQ.

AMSTRAD 3" disk's (Amsoft-CF2), box of ten £15. Bulk orders welcome. Phone Dave on 0705 552940.

TREASURE ISLAND

1 2 3 4 5 6 7 8 9 10

A
B
C
D
E
F
G
H
I
J



CASH PRIZES

0898 313 586

Infodial PO Box 36 LS1 4TN Call Charges 34P Per min Cheap Rate 45P all other times

C64 games for sale, both disk and cassette games at good prices etc. Send SAE to Rodney Franz, 68 Castlemeane Avenue, Gillingham, Kent, ME7 2OE.

AMIGA originals, new Pygnosis Monster Pack of Nitro Infestation Shadow Of The Beast, £15. Obibus + T-shirt, £15. Obibus £10. Awesome £10. Spellbound £7. Tel Norman 0245 352538.

ATARI software. Hisoft Basic Interactive compiler v1.23, £25. Quantum Paint professional v2.0, plus Funface, £15. Maxalt precision paper guide. Fits most printers, £12 or will swap any of the above for PC software. Tel: 081 889 4276 Tottenham.

PC LINE clip art img, or PCX. Format on 31/2 disk. Houses, churches, windmills. SAE for more details to 60 Manham Mill, Scarborough, North Yorkshire, YO11 3DG.

◆ OTHER

BLACK Phantom, radio control car. Indy Suspension 4 Wheel Drive, two motors battery charger, big car, boxed, unwanted prize, £80 o.n.o. Offers write Richard Kemp, 4B Currents Lane, Harwich, Essex, CO12 3DE.

YAMAHA PSS-620 digital synthesizer, 32 PCM drum sounds, 8 drum pads, 100 preset sounds, 100 accompaniments, midi in, out, +thru, boxed with manual, excellent condition, complete with stand and PSU, £190 o.n.o. Tel: 0633 612108. Paul evenings only.

WANTED, Atari 1050 or 810 disk drive. Also Atari "Popeye" cartridge. Tel: 081 693 4134.

AMIGA

Amiga A500 Base Pack	£305.49	3.5" D5DD Disks	£0.40
Amiga A500 Base Pack + 510K RAM	£320.99	5.25" D5DD Disks	£0.30
A500 Base Pack + External 3.5" Drive	£249.99		
A500 Base + 510K Ram + Disk Drive	£378.90	3.5" 80 Capacity Disk Box	£5.72
10845 14" Colour Monitor	£249.99	5.25" 100 Capacity Disk Box	£5.49
510K Ram Expansion	£30.95		
External 3.5" Drive	£54.95		

Please phone or write for a full price list

Millom Micros

9 Cook Road, Millom, Cumbria, LA18 4JH.
Phone 0229 772998 24 Hrs

Send an order with cheque or Postal Order. Please allow 5 working days for clearance. Add £3.50 for 3 Day delivery.
Add £10.00 for Next Day delivery.

Signed _____

MAKE YOUR CODE FRIENDLY



As you write programs, you will find that you have to do the same things over and over again. There will be some routines that you will have to write for every program, to read information from the user or print results to the screen; the routines do the same job, but the format is slightly different each time. The easiest way to deal with this is to adapt code from a previous program. If you've never written a program before, you'll find more than enough examples in any programming text book or manual.

There are other routines - for sorting data into alphabetical or numerical order for example - that you will need to use again and again. Rather than searching through old programs for the code you want, you should keep useful routines in a library. You can copy the code out when you need it, or include a reference to the library file in your main program.

A VISIT TO THE LIBRARY

Do remember to document library routines well. You might want to give them to another programmer, or update them some time in the future. Just because you've included a routine from your library in a lot of programs doesn't mean that you're going to remember how it works.

Once you've started to keep a library, you may well find that you start to think about re-using code when you first start to write it. This is all to your advantage - if you've done the work once, there's no point in doing it again later.

● **You can make it easier** to use your code some other else by making it easier to change the things that are specific to the first program.

If you were planning some code to calculate the average of ten numbers the pseudocode might look something like this:

```
average([ArrayOfNumbers], Average)
  add_up([ArrayOfNumbers], Total)
  Average = Total/10
```

If you wanted to use this later to get the average of five numbers, you would have to rewrite the code. Not only does this take up time, it makes your program that little bit longer. Do that sort of thing a lot and your program will get very large. Re-usable code may be a little longer, but you only include it once.

If you tell the routine how many numbers there are, you can re-use it straight away:

```
average([ArrayOfNumbers], HowMany, Average)
  add_up([ArrayOfNumbers], Total)
  Average = Total/HowMany
```

To make the routine even more portable, so that you can use it with different groups of numbers, let the routine work out how many numbers there are:

```
age([ArrayOfNumbers], Average)
  add_up([ArrayOfNumbers], Total)
  length([ArrayOfNumbers], Length),
  Average = Total/Length
```

Whatever you're programming, whatever language you're using, it is going to be hard work. Mary Branscombe looks how you can make the going easier as you write your code.

This last routine is not only easier to re-use, it is also more robust. If an array of nine or eleven numbers was passed into the routine for some reason, the first two versions of the program would calculate an inaccurate result. The final version can cope quite happily.

If you need to know how many numbers there are somewhere else in the program, you could use the information from this routine, rather than working it out somewhere else as well. You should never make the program do the same work twice if you can help it and it is worth planning the program carefully to make sure that the information retrieved in one place is re-used when it is needed.

**Once you start to keep a library
you start to think about
re-using code - if you've done
work once, there's
no point in doing it again**

● **Constants are easy to change.** If you have any programs that work out VAT, then you will have had to change them to keep up with the budget. That may not take long for a simple calculator, but think about changing the VAT figure in a set of accounting programs. If you set up a constant called VAT at the beginning of the program, it would be very simple to change the figure from 15 per cent to 17.5 per cent. Good code is easy to update as well as alter.

LOOK IT UP

If you are working on a project with a number of people, it is a good idea to keep a central library. Feel free to use your cherished routines rather than anyone else's - but take a look through what the others put in. You

PSEUDOCODE

When you plan a program, you are more likely to write "read in some data" than to write out the full command in the language you are using. If you plan in general terms, you can write the code in almost any language you like later.

The code fragments are in pseudocode since we don't know what language you are using. Pseudocode is similar to many programming languages, but not restricted to the syntax of a single language.

might be able to use some of the code in your sections of the program.

Check out what is in any libraries supplied with your programming language as well. The standard library supplied with ANSI C includes utilities for handling memory, mathematical functions, pseudo-random number generators and functions for searching and sorting, as well as the more familiar input and output functions. Any decent object-oriented programming language will come with an extensive class library for you to use.

Even if you haven't written a program that deals with a similar problem before, someone else may have. There are many commercial libraries on the market, especially for older languages like Fortran. Even if you decide you don't want to re-use the code, it can still give you some ideas. ■

PLANNING

It's worth spending a little more time planning code that you can use 10 times rather than just once, but you should follow the same rules for planning any program.

- Make sure you understand the problem and know what you want the program to do.
- Find out all the data you can give the program as input.
- Decide what information you want the program to output.
- Write down what the problem is and what it involves - this is essential if you are working with anyone else.
- Decide on the main steps of the program - the algorithm.
- Write down how you intend to tackle the program.
- Work through your solution again - just to make sure.

You can divide any program up into different sections. The smaller the sections, the easier they will be to write and more likely it is that you can use the code again.

WANTED - YOUR CO-OPERATION

Whether you use other people's libraries or write libraries for other people - write to us: Programming, New Computer Express, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW

The EVENT HORIZON

Who's doing what, with what, with whom, how, why and where...

THE PLACES TO BE...

Consumer Electronics Show 1-4 June
At McCormick Place, Chicago USA
Info: 010 1 202 4578700.

Virtual Reality '91 5-6 June
At the Conference Forum, London. Info: 071-931 9985.

EEMA 11-12 June
At the Sheraton Copenhagen Hotel, Denmark. Info: 0366 793 028.

Portable Computing '91 18-19 June
At Kensington Town Hall Exhibition Centre, London. Info: 0256 83583.

OIS IMC '91 2-4 July
The document image processing conference at the Wembley Conference and Exhibition Centre, London. Info: 071-931 9985.

PC World Forum 9-14 July
In Moscow. Info from Terence Coe on

010 1 508 820 8122.

The International 16 Bit Computer Show 12 July
At the Novotel Hotel, Hammersmith, London. Info on: 0726 68020.

Computer Animation Competition and Exhibition 21-28 August
Animation is enjoying a considerable amount of popularity, with affordable computers now offering graphics display capabilities previously available only to the professionals. The arrival of some exceptional software has meant that many gifted amateurs are able to create stunning, innovative sequences at minimal cost. A random sample of PD demos will reveal the quality of this work.

The Computer Animation Competition is organised by the Amiga Centre Scotland and is open to Amiga users the world over. The winners' entries will be displayed in the exhibition at the ACS which is part of the Edinburgh Festival, open to the public.

As well as public acclaim, winners will receive prizes of hardware and software from the sponsoring companies.

Entries must be on an Amiga disk or PAL video tape. Closing date is 31 July. Contact Fiona Shiva on 031 557 4242.

Leeds Computer Extravaganza 13-15 Sept
At the New Exhibition Centre at Leeds University. Info: 0532 677 657.

Business Communications Awards 10 October

The fifth competition of its kind, organised by BT in conjunction with The Sunday Times. The awards will be presented at a dinner at the Savoy Hotel, London. Prizes go to those companies able to demonstrate the most effective use of telecommunications.

The closing date for entries is 15 July. Entry forms can be obtained by calling BT on 0800 800 847.

Image Processing '91 29-31 Oct
At the Birmingham NEC. Info: 061 868 9933.

Computer Graphics '91 5-7 Nov
At the Alexandra Place in London. Info: 081 868 9933.

Desktop Cad '91 5-7 Nov
As above

Computers in the City 12-14 Nov
At the Barbican Centre in London. Info: 081 868 4466.

Golden Moments

A look back into the history of computing with Express. If it happened we reported it first.

ONE YEAR AGO

● Playing video games could only be the last request of the most die-hard games' fan. But this is precisely how Leonard Laws, convicted murderer, spent his last hours on Death Row before seeing his last 'Game Over' message.

● In an effort to solve the riddle of the Sphinx, or at least of why it insists on eroding away, scientists placed a computerised weather centre on its back. Working on solar power, the centre sent data on rainfall, wind, humidity and pollutants to a remote host computer. The information was to be used in developing a way of saving the Sphinx from further decay.

● Only five weeks after its launch in Japan, the Neo-Geo console was beginning to make unofficial appearances in UK shops.

The machine offered an impressive specification (it doesn't look too bad today): high resolution graphics, 4096 colours at once and 68000 and Z80 processors working in tandem. Despite its early start, the Neo-Geo doesn't seem to have quite taken off. This could be due to its price - initially £400 for the machine and £200 for each game cartridge.

TWO YEARS AGO

● Cruelty-free computing became reality with a system developed at Manchester University. Called the BioEngine, the system could mathematically predict the interactions of molecules with various drugs, so avoiding the need for animal testing.

● Nine hardware manufacturers accounted for half of the world's personal computer sales, it was revealed in a chart published by IDC.

Only single user machines were included, but nevertheless IBM came out with the largest share at 11.5%. Surprisingly, Commodore came second, with 10.7%, but this was accounted for more by the popularity of the C64 rather than Amiga sales.

The Insider ...

A regular look at an industry which is attempting to 'find itself' in terms of a caring yet strong, warm yet unwimpy personality.

The Insider has had a fine week poking about the computer industry in search of scurrilous gossip and dirty dealings. If you have snips, or snaps, which you think should be aired to the public, the n send them to: The Insider, New Computer Express, 30 Monmouth Street, Bath BA1 2BW. Anonymity is assured, as is a liver for anything used.

PRODUCT KNOWLEDGE NIL

Sega has long been trying to find a character who will compete in the world arena with Nintendo's Super Mario Bros. This year it feels that it has cracked it, if you will excuse the pun, with Sonic the Hedgehog. This spikey, cute little chap is being hyped nearly as much as that ninja-kicking star of field and hospital bed, Gazza. Anyway, at the plush press briefing to announce Sonic to the world, leading PR company Lynn Franks put one

of its star chaps on stage in order to extol the virtues of the hog. He proudly announced that 'The Sonic Hedgehog' had arrived. Lynn Franks currently represents Henny Lenry, Cherry Nehna, and Paul John Ringo Gaultier. Nice one!

THE CPC IS UNWELL

What is this the Insider hears about certain words out of turn at the recent All Formats' Fair in Birmingham? It appears that a certain Amstrad's Roland Perry (the name behind RPED,BAS) mentioned in passing that the dear old CPC was due for a drop in price. Our sources also tell us (and whether this is based on fact is open to question) that out of 100,000 6128s made only 20,000 had been sold. Whoops! Does this mean the we are soon to CPC the death of the machine which made Amstrad so loved in the world of home computers?

OUR SOUR GRAPES

It appears that Mirrorsoft is not pleased with Express' own Tim Smith. In a recent review, the crude and thuggish young hack gave a mere 65 per cent to one of Mirrorsoft's games (*The Clodding Kill* or something like that).

Mirrorsoft's PR lady and washing machine expert, Cathy Campos, felt that she had to write and complain about the outrageous situation. After all, how could a game from the people who brought us *Teenage Mutant Hero Turtles*, get anything less than 100 per cent? Slapped wrists all round.

THE JOKE IS ON THEM

Overheard at Comdex in Chicago: How do you get 400 PC developers in a phone booth? Put Bill Gates in there and they will all crawl up his... (that is quite enough of that for now). See you soon!

The Express guide to computing at the grass roots level this week featuring User Groups from H to W.

NEW ARRIVALS ON-LINE

CLUB M – Monochrome ST user group needs members. Dedication, enthusiasm and a sense of humour are the only membership fees. Small ever expanding PD Library. Write to CLUB M, 59 Maple House, Idonia Street, London SE8 4LT.

USER GROUPS H TO W

HOUSING ASSOCIATIONS - Caroline Maries, Micro Users Ltd, Beaver Housing Society, 23 Lewisham High Street, London SE13. Tel 081-318 1126

HEALTH WORKERS - Sue Mckendrick, Healthlink, 164 Windsor Rd, Ashton-in-Makerfield, Wigan WN4 9ES. Voice: 0942 712 385

IBM PC USER GROUP - PO BOX 360 Harrow HA1 4LQ. 081-863 1191 BBS 081-863 6646

INERTIA ADVENTURES - A ray of light in the dark cavern of the text adventure. Do you dare to enter this saga? Proceed by phoning 0265 51851 for details.

JOMAC USER GROUP - Spectrum and Amiga tips and files sent every month. Write with SAE to Jomac's, Pique Grove, Rhodes Street, Hull

JUPITER ACE - John Charter, Jupiter Ace Forth User Group, 17 Spring Wood Close, Dunston, Chesterfield S41 8BS. Tel 0246 237555

LOCAL AUTHORITIES - Local Authority Micro User Group, John New, Borough Engineer's Dept, Municipal Offices, North Quay, Weymouth, Dorset DT4 8TA. Tel 0305 785101 ext 272

LOTUS PRODUCTS - Lotus User Group, 79-80 Peasod Street, Windsor, Berks SL4 1DH. Telephone 0753 841686

LYNX - R B Jones, Lynx User Group, 39 Ashton Close, Needingworth, St Ives, Cambs

LYNX DISK USER GROUP - J Kouschappas, 172 Pasteur Gdns, London N18. Tel 081-807 3859

MAC SOFT - six games for the Amstrad CPC/G128. Send SAE, blank disk and 50p copy charge to Macsoft, 2 South Meade, Maghull, Liverpool, L31 8EF.

MAGNETIC MEDIA HANDLE WITH CARE - Amiga disk fanzine with news, reviews, music, games, utilities, userhelp. At least two disks per month. Each issue £2.80. Write to Magnetic Media HWC, 25 Riggbourne Hall, Beccles, Suffolk NR34 9JC.

MEGADRIVE CONSOLE CLUB - Used and new games sold, also exchange system and games brought from £6-£22. Write to Andrew Stanford, MCC, 15 Fields Park Drive, Alcester, Warwick, B49 6QR or Tel: 0789 764039 after 4pm

MEMOTECH FILE - 93e St Johns Road, Biddup, Staffs ST8 6LL

MEMOTECH - Phil Eyles - Memotech Owners Club, 23 Denmead Road, Harefield, Southampton SO2 5GS. Tel 0703 585106

8LL MICROSOFT WORD - Lesley Port, Folly House, Madera Walk, Bachelors Acre, Windsor, Berks. Tel 0753 831001

MICRO-DESIGN USER GROUP - a new group for those PCW owners requiring assistance and advice with this DTP package. Large clip art library available. Phone Phil on 0709 543390

MT CORNWALL COMPUTER CO-OP - Atari ST, 8 Victoria Road, Roche, St Austell, Cornwall PL28 6JF. Telephone 0726 890473

MD/MUSIC - Spectrum music machine/MIDI user group. Magazine on tape, plus programs and lots more. For more details contact Sean Sanderson on 05242 62258

MOTOROLA 68xxx MICROS - write to Rick Applegate, 68 Microgroup, 8 Great Gob, Springfield, Chelmsford, Essex. BBS Tel 081-316 7402

MSX SYSTEMS - write to Keith Neal, MSX Link, Austerly House, 80 Austerly, Bourne, Lincolnshire PE10 9JL

NASCOM/80-BUS/CPM - Scorpio Systems, PO BOX 286, Aylesbury, Bucks HP22 6PU. Tel 0296 624868

NEW BUG COMPUTER CLUB - Support for all machines. Meets weekly at Oxleaze Multi-Purpose Centre in Washington each Tuesday at 7pm. All welcome, visitors 50p

NEWBRAIN - Ron Bury, NewBrain Support Grp, 70 Cranberry Lane, Darwen, Lancs BB3 2HL. Tel 0254 771891

NIMBUS - write to 13 Belle Vue Ave, Gosforth, Newcastle-upon-Tyne NE3 1AH. Tel 091-285 7806

NINTENDO GAMEBOY - I would like to start a user group for the Game Boy. Write to Justin Spencer, 2 Rose Villas, Thurnholmes Farm, Downton Ferry, Near Doncaster DN9 1BE or Tel 042727588

NW ARCHIMEDES USER GROUP - Meets every Friday at Citizens Advice Bureau, next to Spectrum arena in Birchwood, Warrington. Ring Paul on 051-426 3915 after 6pm

OBSELETE COMPUTER CLUB -

Established 1990 to preserve and support Pre 1986 micros. Applications in writing to Mr S Walters, 42 Achilles Road, London NW6 1EA stating system details, date and history. All systems, micros and minis.

OLIVETTI PCL/PCS USER GROUP - Help with all aspects of these machines. Tel 0924 892106 or write to 68 Queen Elizabeth Drive, Northampton, W Yorks

OS/2 - Karen Burns, OS/2 User Group, Cecily Hill Castle, Cirencester, Glos LG7 2EF. Tel 0285 655888

OSBORNE/CPM/MSDOS - write to Jeremy Browne BOOG, 102a Aldershot Road, Fleet, Hants GU13 9NY. Tel 0252 621745 voice or 626233 BB

PAGESTREAM USERS GROUP - all Atari/Amiga owners of Pagestream send large SAE to PUG, 70 Orlerton Lane, Stockport, SK2 5BS. Include all your tips please.

PAS PD for the ST. Send 75p for the latest details and disk catalogue (refundable). Write to PAS, 97 Holland Street, Ebbw Vale, Gwent NP23 6HY

PC INDEPENDENT USER CLUB - Helpline service, bi-monthly journal, shareware/AD, local meetings, bulletin board, £29-450 p, £36 business, £19 students) Free 30 day trial 0732 771512

PHILOSOPHY APPLE - G Haines, Chinese Room Club, 43 Cornwallis Gdns, Hastings, East Sussex TN34 1XL. Tel 0424 714 102

PICK OPERATING SYSTEM - Hugh Kell, UK Pick Users Assocn, PO BOX 907, London N10 2SB. 081-462 4666

PRESTEL - Andy Leeder, ClubSpot 810, Church Farm, Stratton St Michael, Norwich, Norfolk, NR15 2QB

PSION ORGANISER - Mike O'Regan, IPSO, 120 Stapleford Ln, Beeston, Nottingham NG9 6GB. Tel 0602 735482

PC'S ATARI PORTFOLIO USER GROUP - New user group for the Portfolio pocket PC/organiser. Offers: newsletters, technical assistance, Talkback feature, software/hardware updates and hot news. Tel 0635 73662

QUANTA, QL AND THOR USER GROUP - The Corner House, Loxley, Warwick, CV35 9JT. Tel: 0789 842543

RESEARCH MACHINES - Steve Rochford RM National User Group, George Stephenson High School, Southgate, Killingworth, Newcastle NE12 0SA. Tel 091-268 2002

REVELATION (PICK) - write to Malcolm Frame, UK Revelation User Group, 136 Saint Albans Road, Watford WD2 4AE or Telephone 0923 35515

R:BASE - write to Mrs Tansy Beal, R:Base User Group c/o Room A2044 BBC Woodlands, 80 Woods Lane, London W12 0TT. Telephone 081-576 7187

SA40 User group - write to Roy Williams, 17 Grove Road, Acton, London W5 6AW

SANYO MBC-550 - M H Syed, Wistaria, 53 Acacia Grove, New Malden, Surrey KT3 3BP. Tel 081-942 9009

SCHNEIDER EURO PC - Alex Kefford, SEPUG, 11 Crabtree Road, Three Bridges,

Crawley, West Sussex RH10 1NF

SCIENTIFIC PC USERS - write to Tim Bunning, SPCUG PO BOX 17, Retford, Notts DN22 6BQ Tel 0777 769009

SEGA SWAP CLUB - Exchange your old megadrive games with other members. For details send SAE to SSC, 10 Sandwith Road, Todmills, Sheffield, S31 0JP

SERIOUS GAMER - Flat C, 43 Colvestone Crescent, London E8 2LG. Telephone 071 241 5446

SERVICES USERS - write to Squadron Leader G Howson, Services Personal Computer Association, Stik Eng 15a HQSTC RAF High Wycombe, Buckinghamshire

SHAREWARE SWAPSHOP - 400 plus PC shareware disks available free. Send Blank disk (3.5 or 5.25) and return postage for a copy of our catalogue to The SSS, 69 Tillingbourne Green, St Mary Cray, Orpington, Kent, BR5 2EX

SHARP USERS CLUB - contact Andrew Ferguson, 11 Harcourt Close, Henley-on-Thames, Oxon RG9 1UZ. Tel 0491 574850 evenings only

SHREWSBURY AMIGA USER GROUP - 1 Haughmond Court, Featherbed Lane, Harlescott, Shrewsbury, SY1 4NL. Please enclose an SAE

SIRIUS - Simon Sheppard, ISSUE PO BOX 222, Brighton BN1 3BR

SHAREWARE KING - quality PC shareware. Over 3000 disks. Send SAE plus disks for catalogue to C Smith, 10 Penwood Close, Westbury, Wilts, BA13 3LW. Tel 0703 865263

SHREWSBURY AMIGA USER GROUP - informal meetings and lots more planned. Write with SAE to A Preece, 1 Haughmond Court, Featherbed Lane, Harlescott, Shrewsbury, SY1 4NL

SOFTWARE EXCHANGE - send an SAE for info to 13 Bourneville Lane, Birmingham, B30 2JY or phone 0860 444594 from 12pm to 10pm

SOFTWARE EXCHANGE SERVICE - buy/sell/swap Amiga, ST and PC. SAE for

info to 13 Bourneville Lane, Birmingham B30 2JY or call 0860 444594

SOLITUDE MOUNTAIN - Friendly new Amiga user group. Send blank disk or 50p to 565 Heathway, Dagenham, Essex

SORD M-23 - B Nicholson, Schlumberger Norge A/S Bjergstedeveien, 4007 Stavanger, Norway. 474 657002

SMART SYSTEMS USERS - write to Francis Barton, Basement Holy Rosary church, Louis Street, Chapeltown, Leeds LS7 4BP. Tel 0532 629202

SOFTWARE EXCHANGE SERVICE - for info send SAE to 13 Bourneville Lane, Birmingham, B30 2JY. New telephone number: 021 459 7576. Buy/swap/sell.

SOUTH 16 AMIGA USER GROUP - the UK's number one Amiga user group. For more information send SAE to South 16, PO box 16, Southampton, SO9 7AU. Now!

SOUTHERN AND DISTRICT - PC and ST user group. Tony Lowes 61A Broadway West, Leigh on Sea, Essex SS9 2BX

SPANDFAUX SOFTWARE - 68000 AC Coders magazine. Send £2 for sample to 4 Cambridge Terrace, Harrogate, North Yorkshire, MG1 1PN. Atari, ST, IBM PC. 3.5 inch disk included in price.

SPECTRUM PLUS 3 USER GROUP - monthly magazine. 57 Lovers Walk, Dunstable, Bedfordshire, LU5 4BG

SPECTRUM DISCOVERY CLUB - magazine on disk for the Opus Discovery Disk Drive and the Sam Coupe. BD Mumford, 57 St Saviours Road, West Croydon, Surrey, CRO 2XE

STEN - the ST enthusiasts newsletter issue three now ready. Send a disk and SAE for your copy now. Postal Trivia League starting interested? Write to 14 School Road, Morningside, Newmans.

STOS magazine, out every month. Send an SAE for full details to 11 Shore Crescent, Bishops, Waltham, Hants SO3 1DZ

(Continued on the next page.)

SPOTLIGHT ON

Z88 EPROM

This user group with a name that sounds more like a microchip than a gathering of enthusiasts is dedicated to the users of Sinclair's portable computer, the Z88.

It's easy to forget how popular the Z88 is but travel a few miles on the train and you'll see this rubber-keyed marvel being used by everyone from a businessman to a student. It's A4 size and convenient in built software make it a popular computer for those on the

move. However its niche market attraction means that any support must come from a strong user group. Z88 Eprom publishes an informative A5 magazine packed with mail, helpfiles, diaries; reviews, hints and tips for every Z88 owner. How do you get in touch with these folk? contact Roy Woodward, Z88 Users Club, 68 Wellington Street, Long Eaton, Nottingham, NG10 4NG.

SHOPPING EXPRESS BUYERS' GUIDE

While Shopping Express is undoubtedly the perfect way to track down the best bargains in the computer world, many people are still wary of buying products via mail order or through personal ads. This is probably because usually you are not able to have a look at what you are purchasing before you hand over your money.

We do everything in our power at this end to make sure that all the advertisements we run are above board. But here are a few tips designed to help take the risk out of buying via mail order or over the telephone.

● Be precise in describing what you want to

buy. Leave no room for error. Feel free to go overboard in double checking details - make, model, specifications, colour, size, the page number and name of the magazine in which you saw the advertisement etc.

● Confirm the exact price of the article you are buying. If you are phoning a company check if there are any hidden extras, such as postage and packaging.

● Check how the item will be delivered to you and how long it should take. This is especially important with reader ads where delivery details are rarely mentioned.

● If you are writing off for the product keep copies of all letters. If you are phoning, note

down details of when you phoned and who you spoke to.

● If possible enquire about guarantees and servicing. Check the supplier's policy on returns and refunds. With reader ads, it is best to make the effort to see the item personally before you hand over money.

● When dealing with companies it is best to pay by credit card, especially for items over £100, as this provides extra cover under the credit card companies' own insurance schemes. Otherwise use a crossed cheque or postal order. Avoid sending cash at all costs.

STOURBRIDGE ATARI USERS' GROUP - for 8-bit Atari computers. Send SAE to LK Taylor, 99 Bredon Road, Stourbridge, West Midlands, DY8 4LA. Telephone 0384 379575

STUPID FLOWER PD - new library for ST users. Send an SAE for a free catalogue to SPFD, 3 Read Mead, Glastonbury, Somerset BA5 8ON or call 0458 35027 and ask for Matt.

SUPERPROJECT - Geoff Groom, 3 Sunnymead Ave, Carshalton Beeches, Surrey, SM5 4JA. Tel 081-643 3336

SYNCSOFT - Exclusive 64 computer information. £2.95 to join, including p.p. Make cheques to Syncsoft and send them to 9-10 Morland Gdns, Southall, Middx UB1 3DY

SYRACUSE ARCHEMEDES DISK MAGAZINE out now only £4.99. Includes the magazine disk plus two disks of public domain software. Send to Aste Wythehouse House, 10 Alastair Crescent, Prenton, Wirral, L43 0UR.

TAS (DATABASE) - Neil Hegarty, TASUG C/O Solutions for You, 1st Floor, 2 Lytton Rd, New Barnet, Herts EN5 5BY. Tel 081-441 1133, BBS 081-449 41 71

TCS PD - over 250 disks. Only 99p. Send SAE to 40 Upton Gardens, Tarring, West Worthing, Sussex.

TANDY/MS-DOS - Roger Storrs, NATGUG Oakfield Lodge, Ram Hill, Coalpit Heath, Bristol BS12 2TY. Telephone 0454 772 920

TELECOMMS USERS GROUP - interested in forming a Business Users Telecomms Club? If so then contact John Lever, Systems Services, Little Thatches, Rushden, Nr Buntingford, Herts, SG9 0SH. Tel 076 388393

TEXAS TI99/4a - Peter Brooks, International TI User Group, 96 Banbury road, Oxford OX2 6JT. Telephone 0865 510822.

THUNDERNEWS - CBM 64 user magazine on disk/tape. Send SAE for details and competition to 159 Hough Road, Wallisall, West Midlands WS2 9BG

TIUGUK - TI99/4A user group UK for S/W on disk, tape and module. Offers magazine and help. Write with SAE for more details to Peter Walker, 24 Bacons Drive, Cuffley, Porters Bar, Herts EN6

TRANSPUTER - Howard Oakley, Transputer User Group, Brooklands Lodge, Park View Close, Wroxall, Ventnor, Isle of Wight

TURBO - SAM Coupé user group. Six newsletters and six magazines each year plus a big PD library. £10 for a year. SAE for information to TURBO, 8 Heale, Lakeside, Tamworth, Staffs, B77 2RF. Established January 1990.

TYPECAST PDL - Atari ST/STE PD. Solely for DTP, WP, Art, clip art, no games. Send disk and SAE for disk catalogue to 31 Hatfield Crescent, West Wickham, Kent.

UNIX USERS - UKUUG Secretariat Owles Hall, Buntingford, Herts, SG9 9PL. Tel 0763 73039 / 73255 (fax)

VENTURA PUBLISHING - VPU (Ventura Publisher User group) Linda Liddell VPU c/o LLA Lound House, Forncett St Mary, Norfolk, NR16 1JP. Tel 0508 41580

WAKEFIELD AND DISTRICT AMIGA USERS - interested in forming a local Amiga users' group? Contact Eddy on 0924 361101.

WHITE HEAD PDL - Atari ST PD from £1.40 per disk. Send two second class stamps for latest list to Hakan Akbas, White Head PDL, 15 Cavendish Mansions, Clapton Square, London E5.

WORDPERFECT - Michael Norman, Wordperfect User Group (UK) Dove Barn, Manor Farm, Wootton Woodstock, Oxon, OX7 1DX. Tel 0993 812 670

WORDPERFECT - Dr Ian Barton, A Perfect World, High Rise, Alma Rd, Tidwell, Derby SK17 8LS. Tel 0298 871 925

JUNE AUCTIONS ROUND-UP

MANCHESTER COMPUTER CONNECTIONS (0254 813316)

18 JUNE - Bowlers Leisure Complex, Trafford Park, Manchester. Sale starts 10am, viewing and testing from 8-00am.

MIDLANDS

TRADERDESK (0527 579120)

29 JUNE - National Motorcycle Museum, NEC, Birmingham. Auction starts at 11am, viewing from 9-30am.

SOUTH EAST

TRADERDESK (0527) 579120

15 JUNE - Harrow Leisure Centre, Harrow, Middlesex. Auction starts 11am, viewing and testing from 9-30am.

MCD (0832 788600)

8 JUNE - St Pauls School, The Ridings, Green Street, Sunbury-On-Thames. Auction starts at 10-30am. Viewing and testing on the evening beforehand from 5pm-8pm and on the day from 9am.

TECHNOLOGY COMPUTER SERVICES.
(081 651 3639)

1 JUNE - Kennal Manor School, Sevenoaks Way, Orpington, Kent.

Auction starts 10-30am, viewing and testing from 9am.

15 JUNE - Pickhurst Junior School, West Wickham, Kent. Auction starts 10-30am, viewing and testing from 9am.

SOUTH WEST

ABTEK (0722 413337)

1 JUNE - New College, Froisher Road, Swindon. Viewing and testing from 8-30am, auction starts at 11am.

BIDDING TIPS

- Prices at auctions can be quite a lot lower than in shops, but you will have to pay in full on the day.
- Make sure you get a catalogue before you go along. If you phone the companies they should be happy to supply you one.
- Set yourself a limit.
- Give any items you are considering bidding for a good look over and check if there is any warranty. If there is not you still have the rights of a second-hand buyer. Under the Sale Of Goods Act you are entitled to a refund if the item is faulty or does not match up its description.
- Wait for the auctioneer to call the first bid, he'll come down if no-one offers.

Future
PUBLISHING

Technical Writer

Salary range £10,000-£12,000

- Launched in 1985
- Now over 200 staff
- Market leader in computer titles
- Exciting launch plans
- Britain's fastest-growing publisher
- 14 national newsstand magazines. Namely: *New Computer Express*, *Amiga Format*, *ST Format*, *Commodore Format*, *Amiga Power*, *Amiga Shopper*, *Amstrad Action*, *Your Sinclair*, *Sega Power*, *PC Plus*, *8000 Plus*, *PC Answers*, *Needlecraft* and *Classic CD*.

Do you know your bits from your bytes? Would you know what a Megabyte is when it's at home? Can you write intelligent, literate copy to meet strict deadlines? Do you know a fair bit about the Amiga, the ST and the PC? Are you an insatiable consumer of magazines?

Here's why we ask. Future Publishing, Britain's fastest-growing publisher, is looking for a technically adept and literate person to write astonishingly lively, entertaining and enlightening copy for *New Computer Express*, Britain's best-selling weekly computer magazine.

We're not looking for The World's Most Boring Tech-Head, but rather for a smart, ambitious, self-motivated writer who knows why computers *enable* rather than *allow*; who can explain to experts and beginners alike how to get the most from their computer; and who fancies the idea of living in Bath, earning a decent but not massive salary.

If that sounds like you, send a letter of application, a CV and either samples of published work or 500 words on Why Computers Need Magazines, to **Lauren Evans, Human Resources Manager**, at the address below. Pronto

DO YOU WANT TO BECOME A PROGRAMMER?



Established 1968

Move across to the rewarding world of IT

We have a series of short and long term training programmes in Computing and Information Processing.

- * C & G 424/425 Certificate in applications programming.
- * C & G 418 Computer Programming & Information Processing.
- * Evening courses in DBASE, WP, Spreadsheet Analysis.
- * Evening courses in Pascal, BASIC & COBOL.

Contact Central London College on
071-580 4596.

TRAINING FOR YOUR FUTURE

PROGRAMMERS GRAPHIC ARTISTS

We are looking for people with talent and dedication to join our in-house team.

Programmers should be able to show at least one completed game in any assembly language.

Artists should be able to provide ST or Amiga demos that are of the highest quality.

Send your C.V. and demos to:

Mr G Foreman
GRAFTGOLD
2 Freebournes Court
Newland Street, Witham
Essex CM8 1AE
Tel: 0376 500275

GRAFTGOLD

Sleepless Knights

We require one PC Programmer (assembler only) to work in house, developing top quality software.

The likely candidate may not have had any previously released product, but will be able to demonstrate a high degree of technical ability in programming the PC. This person will start work immediately on a product we are currently developing for Microprose Software Ltd at 12K Plus.

Contact in strictest confidence Mark, Keith or Blizzard anytime on:

Tel: 0772 881564
or Fax: 0772 881600

Alternatively write to us at this address:

Sleepless Knights,
Church Court Business Centre,
Church Street, Preston
Lancashire PR1 3BS.

TEMPUS SOFTWARE URGENTLY REQUIRE

Amiga, ST and PC
programmers
to work on exciting
new software projects
in-house and
freelance.

*Phone in strictest
confidence*

021 429 2442

and ask for Phil
or Shaun

Freelance Computer Graphic Artist



applied interactive technology

A.I.T. is a Henley based company working on a wide variety of leading edge design and technology projects. We apply computer graphic design to on-screen applications ranging from entertainment to banking systems.

We need a freelance computer graphic designer and visualiser to work in-house to supplement our staff team.

You are talented imaginative and keen to work in a challenging cheerful hardworking environment. Fluency in use of Deluxe Paint software is required and in return we offer excellent rates of pay and working conditions.

To find out more, phone in the first instance or send your CV to:

Matthew Tidbury,
Design Manager,
A.I.T. Limited,
The Old Assembly Rooms, 16 Bell Street,
Henley-on-Thames, Oxon RG9 2BG
0491 579272



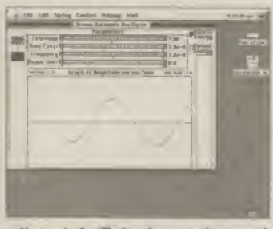
MAC FANTASTIC

The Apple Macintosh has long been a computer associated with huge bank balances and unlimited spending power. What then, would people who could afford such a machine, have of free software?

Probably very little, but with the advent of the Mac Classic, Apple power and flexibility has come within reach of a whole new market. The Classic isn't much more expensive than an Amiga (with monitor), and offers one of the best desktop environments around.

So what does this have to do with Public Domain software? Fact is, the American PD scene caters extremely well for the Macintosh. Hobbyists and professional programmers alike have been pumping out software of incredible quality for years now.

Fantasia Software in Bristol has a



• Harmonic Oscillation: learning physics with the Mac is easy and fun.

THE PD COLUMN

It's Public Domain time again folks, your weekly guide to all the best in (almost) completely free software. This week: Mac mania, weird demos and great games...

useful and impressive range of Macintosh and PC software. The firm dropped off a few sample disks of assorted stuff at the office, an office which happens to be chock-a-block full of gleaming Macs.

A lot of the software was extensions, add-ons and variations of desktop features. Some serious, some not so serious. One of the weirder things was a disk containing screen saver graphics. Screen savers are pictures which flash randomly when you aren't using your Mac. These stop images burning your picture tube and ruining your monitor.

Lots of these were simply pictures, but the most entertaining one is a little group of fish who swim around, the big ones eating the little ones. Well, we thought it was funny anyway.

On a more practical note, the discs contain some absolutely brilliant educational programs, covering all ages, from toddlers to adults (at least adults with a precarious grip on the likes of particle

physics and bio-chemistry).

There is a simple and useful arithmetic teaching program. This displays a running child (boy or girl depending on your choice). The child will run toward a finish line if you answer an arithmetic problem correctly.

**We all know
Mr. Einstein's theory,
but watching it
graphically on screen
clears a lot of confusion**

The answers are displayed multiple choice style at the top of the screen. This makes the margin for error slightly less, but is a useful gauge of how well your child grasps arithmetic.

The difficulty can be set before the 'game' begins, so you can vary it according to your child's age or ability.

The program isn't particularly complex, but it is polished and entertaining.

For the more intellectually aspirational among you, there is a whole suite of physics software, all educational. This software includes practical demonstrations of most aspects of physics, the most intriguing of which is a graphical model of the theory of relativity.

This particular program shows a 'rocket' made of clocks, travelling at light speed. As the rocket accelerates, the effect of faster than light travel is shown on the clocks. The hands of the clocks, following mathematical principles, begin to move backwards. This apparently proves Einstein's theory of relativity. We have all heard the theory, but watching it explained graphically on screen clears up a lot of doubts.

There are also similar programs explaining Kepler's spring thing theory, Ballistic motion, potential energy and harmonic oscillation. Great for all the people who flunked physics at school.

— SHAREWARE WITH A DIFFERENCE —

FANTASIA

— SHAREWARE WITH A DIFFERENCE —

MACINTOSH SHAREWARE FROM ONLY £3.10 A DISK **

BUSINESS B01

BIPLANE This spreadsheet comes in either DA or application. Contains 32 built in formulas.
MOCKPACKAGE 4.0.4 This is a set of four DA's: MockWrite, MockPrinter, MockChart & MockTerminal.
BOLOBLACK BOOK/ADDRESS/TODO Various useful DA's.
SCREENLOCK DA Asks for Password and then it blanks the screen. When reactivate the screen with the same password is entered.
MACPROTECT Password protects applications, for use in insecure environments.
SYSPWD Startup password protection program for use with Hard disks.
FLINTLOCK Similar to SYSPWD.
ADAD A good financial calculator.
PAINTSHOW Reads into of MacPaint files and shows them in slide-show fashion.
MACBILLBOARD Print billboard sized pictures using a standard printer. Good giant gigawatt meter.
BANTR Print a large simple text message on an imagewriter printer.

GAMES G03

GOLF Popular version of solitaire.
HEARTS Another popular card game.
KING ALBERT Another clone of Solitaire, variation on Klondike.
KLONDIKE The all time classic Solitaire.
MAC SEVEN Stacey card game.
DECK FORT Customise the graphics on the cards. Only works with certain card games.
TRICK TRACK A dice game played on some pubs.
PLUS: As Headroom, Automats, Pyramid, High Roller, Mouse Craps, Lots & Bills Casino.

GAMES G06

STUNT COPTER Drop the stuntman into the bay wagon from the helicopter.
TORPEDOES Sink passing ships with your torpedoes.
TRON CYCLES Try to block your enemies cycles before he blocks you.
UTAHAN ATTACK Destroy the ships before they reach the bottom of the screen.
WIZARDS FIRE Three games in one!
Breakout, Pacman and Wizard Five (you like Mistle Comfyland).
ZERO GRAVITY Keep your man in the middle of the zero gravity to get the lowest score.

GRAPHICS G10

STARTUP SCREENS Are you sick of the normal startup screen, then why not get this disk. All you do is put one of the startup screens into the system folder and when you startup you will be greeted by that screen instead of the WELCOME TO MACINTOSH screen. Screens include the Mamma logo and pictures, plus many more.

COMMS C01

RED RYDER
This is the best communications program all round, it is also the most popular program of its kind for the Macintosh. All other communications programs are measured up against this one. Use it to call up other Bulletin Board Systems or call Computerwise etc... You can connect to almost any other computer.

EDUCATION E01

BRAIN BUSTERS Maths games for kids.
GRADE Teacher gradebook program.
GRAVITATION 2 dimensional orbital simulations.
MAGGRAPH Outstanding mathematical function graphing program.
MECHANICS Small graphics programs that illustrate various principles of physics.
MONSTER MATH Add up numbers and evade the monsters.
OYSTER Demo system that enables you to create your own tutorials.
TINY TAFEL Genealogy program that will help you get back to your roots.
TOOLS FOR WRITERS The only shareware version we have seen. With it you are able to check your writing for vague words.

EDUCATION E02

GEOLOGY Various graphics programs that can be used for picture aids in geology classes.
MATH MOUNTAIN Answer the maths questions to get the mountain climber up the mountain.
MATH MUD Give the correct answer to keep the boy from falling in the mud.
MATHMASTER 2 Designed to help teach algebra students many of the basics for first year algebra.
MATH TUTOR Teach students various types of simple maths.

ALL PRICES INCLUDE
VAT AND P & P

MAC STACK 22

MATH FLASHCARDS Flash cards for addition, subtraction, multiplication and division.
MATHVENTURE Program through the jungle. Requires Macintosh.
MONEY Quizzes children on money.
OLLIES NEW MATH Ollie the owl drills children in Addition, Subtraction, Multiplication & Division.
PLOTTIT Enter X & Y data to be plotted on a graph.
RIGHT TRIANGLE Calculate the unknown proportion of a right angle triangle.
HEATHERS NOTES Teaches notes on the keyboard, using pre-recorded tones, voices and musical sounds.

DA's DA01

AIRPORTS Calculate distances between airports.
STARGAZER Shows the night sky for today's date.
PLANETS Shows the planets visible on today's date.
3D TIC TAC TOE Play against the computer on four levels at once.
PLUS: Calculators, Text editors, Screen savers, Tunes, comics, and a selection of novelty DA's too numerous to mention.

PROGRAM P01

DATAFLOW A Mac Flow Chart. Debug programs before coding them.
DIALOG CREATOR Make your own dialog boxes and then move them using ResEdit or similar.
DISKARM Disassemble 68000 resource code.
EDIT 2.1 A text editor for programmers. Save indent, search and replace, time stamping and more.
LAYOUT Customise your finder. Change icon spacing, default icons, and more. Be very careful this package is very powerful.

PRICES

BUY	PAY
1 - 5	£4.00
6 - 10	£3.85
11-15	£3.70
16-20	£3.55
21-25	£3.40
26-30	£3.25
31-50	£3.10

Prices are per disk

Packs of blank disks.

10 * 3.5" Disks £5.50

10 * 5.25" Disks £4.50

All above prices are inclusive VAT and P & P. **This is only a small selection of shareware that is in our library. Please ring for a free catalogue.

IMPORTANT NOTICE

Please check the price tables for the cost of your order, as some programs are made up of more than one program. The price you see is the price you pay, which means that all prices are inclusive of VAT and Postage & Packaging. As we like to say "WYSIWYG" prices.

Please note: We are unable to guarantee that all the above programs will work with all machines and configurations available. This problem is particular to machines more powerful than the SE and 'with games. So if problem has generally occurred then we will exchange the disks for a small fee of £1.50 per disk as a handling charge.

HOW TO ORDER: PLEASE ENTER THE FOLLOWING ON A SHEET OF PAPER.
Your name and address, your daytime telephone number, your credit card details or whether a cheque is appropriate. Any alternative address for delivery and a list of the products, which usually means a list of disk numbers. Or alternatively you can ring your order through and leave all the above details.

A BIT TOO SERIOUS?

If all this talk of Einstein and Kepler is a bit too much for your poor brain, then Fantasia can also provide a nice easy range of games. Mostly puzzle games, but there are a couple of arcade titles floating around. The range of games is all very well, but hidden amongst them was a real little gem.

A guitar synth! It will keep you engrossed for hours. The strings of the guitar are displayed on screen, you simply drag the mouse pointer across them to play notes or even chords.

It is completely idiot proof, you hold down selected keys to change the note or chord and away you go. Twang, Ker-rang, Wooooaaaway. Eddie Van Halen eat your heart out. Well, no, not quite. But while the sounds aren't exactly AC/DC, they are enough to give you a few hours strumming fun.

DEMOS TO GAMES

A reasonably well known PD demo maker and supplier has finally put its name on the map. Seventeen Bit Software has just released its first fully commercial game.

Full Contact is obviously far too good to be released on the PD circuit and so, by securing a publishing deal with specially named budget label Team 17, the Seventeenies have started something really interesting.

Demo makers make games? Everyone knows that the best demos include some absolutely stunning programming techniques, these it seems have been carried over onto the well received first release.

Stalwart PD spotters may be able to recognise some of the graphic styles used. Well done to the Seventeen Bit team, especially as the game has been

released at a 16-bit budget price of £10.99, which should put many big software houses to shame.

AMIGA PSYCHEDELIC TRIP

• No Limits: Wild Amiga demo

Amiga demos are hardly sparse, so it comes as something of a surprise when a demo makes you sit up and take notice. New Wave software sent along a demo that did just that.

The No Limits Back Pack 2 demo (I swear, the names get even more stupid than that) contains some really poky tunes and graphical effects, some of which are impressive and some completely mind-blowing.

One of the options on the menu you are presented with, is to boot up some of the most psychedelic images you'll ever see. Most of these involve bands of colour moving almost exactly like water. The movement of the "water" is almost hypnotic and further enhanced by the use of a full 4096 colours.

WHERE TO GO

Fantasia Software supplies a vast range of software for IBM PCs and Apple Macintosh. Its Mac catalogue will be available shortly, send an SAE to: Fantasia Shareware, PO Box 1254, Compton Martin, Bristol. Tel: 0761 221585

Seventeen Bit Software can be contacted at: Seventeen Bit Software, PO Box 97, Wakefield, WF1 1XX. Tel: 0924 366982

More Amiga demos from: Virus Free PD at 23, Elborough Road, Moredon, Swindon, Wilts, SN2 2LG.

The music tracks accompanying this visual display are, without exception, brilliant with excellent use of samples and sequencing software. Most alluring is a kind of Japanese sounding hip-hop mix.

There are the usual vector and copper bar displays, all of which are pulled off flawlessly and seemingly in time to the music. The good thing about the No Limits demo is that it features the work of a fair few artists. Musicians and programmers, all showing off as much as they can fit on a disk. ■

GET SPACED OUT

Aircraft and spacecraft enthusiasts will be pleased to hear that a disk packed full of hugely interesting information on all things aeronautical has become available, including articles from leading NASA scientists, no less.

One of these is a rather sinister letter from a NASA guy explaining that he had to stop work for a time, while

repairs were made to the sealing rings on the doomed shuttle Challenger. Apparently, it was written before that terrible accident of 1986.

It's these little extras which set this program apart from standardised lists and numbers information databases which, while useful, hardly make for a jolly riveting read.

P.C.S INTERNATIONAL PD THE NORTHWEST'S BIGGEST PD LIBRARY

33 Chapel Green Road
Hindley
Wigan WN2 3LL
0942 521577



FREE POST

AMOS LICENSEWARE £3.50 each

- LPD 1 Colouring Book
- LPD 2 Arc Angles Maths
- LPD 4 Thingamajig
- LPD 5 Jungle Bungle
- LPD 6 Pukadu
- LPD 7 2 Way Lynx
- LPD 8 Work and Play
- LPD 9 Amos Assembler
- LPD 10 The Word Factory
- LPD 11 Go-Getter
- LPD 12 Hypnotic Land
- LPD 13 Jigmania
- LPD 14 Play It Safe
- LPD 15 Shapes and Colours
- LPD 16 Renersi 2
- LPD 17 Dogfight
- LPD 18 Touchstone
- LPD 19 X-IT-So
- LPD 20 Wordy
- LPD 21 Cruising

BUSINESS

- PCB 1 Amibase 3.76
- PCB 2 Quickbase
- PCB 3 Textplus 2.2
- PCB 4 Bankin
- PCB 5 VC Spreadsheet
- PCB 6 RM Database
- PCB 7 MWD Wordprocessor
- PCB 8 Hyperbase
- PCB 9 Appointment Calendar
- PCB 10 Household Inventory

UK ORDERS ONLY

CREDIT CARDS TAKEN
WITH ORDERS OVER £10.00

GAMES

- PCG 1 Learn & Play (not Amos)
- PCG 3 Pipeline
- PCG 4 Breaker Construction Set
- PCG 6 The Computer Conflict
- PCG 7 Games Compilation
- PCG 9 Tennis
- PCG 11 Castle of Doom
- PCG 12 Pseudo Cop
- PCG 14 Board Games
- PCG 16 Marble Slide
- PCG 18 Blizzard
- PCG 20 Card Games
- PCG 22 Car
- PCG 27 Monopoly (US version)
- PCG 32 Return To Earth
- PCG 34 Diplomacy
- PCG 38 Buggy Commando
- PCG 39 The Next Generation
- PCG 41 Cluedo, Slider, Lunar Landing etc (1)
- PCG 43 Stone Age
- PCG 44 Snakepit

SLIDESHOWS

- PSS 1 Agatron 2
- PSS 2 Agatron 3
- PSS 3 Agatron 4
- PSS 4 Agatron 7
- PSS 5 Agatron 8
- PSS 6 Agatron 25
- PSS 7 Agatron 28
- PSS 8 Agatron 29
- PSS 9 Agatron 30
- PSS 10 Agatron 32
- PSS 11 Agatron 33
- PSS 12 Agatron 34
- PSS 13 Kim Wilde
- PSS 14 CBM 64
- PSS 15 Kylie (2)
- PSS 18 Via Calendar
- PSS 20 Watership Down
- PSS 21 Elm St

- PSS 22 Arnie
- PSS 25 Batman
- PSS 26 The Simpsons

DEMOS

- PCS 216 The Bartman Collection (5) 6.00
- PCS 231 Phonoma Engma
- PCS 232 Robocop Digi Movie
- PCS 233 War of the Worlds
- PCS 236 Electric Youth (2)
- PCS 241 Star Trek (2)
- PCS 300 Killer (Adamski)
- PCS 301 MC Hammer Mix
- PCS 302 Off The Head
- PCS 303 Highlander
- PCS 304 Notbingagain
- PCS 305 Real Things Birds
- PCS 306 Wild Copper Demo (2)

UTILITIES

- PCU 105 Anti Virus Pack II
- PCU 118 Virus Killer Collection
- PCU 142 Cabedesigner
- PCU 183 Comms Disk III
- PCU 193 A Render
- PCU 393 Ultimate Icon Disk
- PCU 663 Business Card Maker
- PCU 823 Printer Drivers
- PCU 1001 Disk Master V3
- PCU 1043 Master Virus Killer 2.1
- PCU 1202 Red Sector Demo Maker
- FF 229 Alarming Clock
- FF 246 Noclicky 3.6
- FF 396 Roadrunner
- FF 397 DKB Trace
- FF 415 BBS (Amateur radio)
- TBG 1 Disc Catalogue
- TBG 4 Dirutil 5
- TBG 10 Autopic 2
- TBG 16 CLI Wizard
- TBG 18 Big
- TBG 20 Brush to Icon
- TBG 30 Mymenu

AVAILABLE NOW

AMOS	1 - 197
AMOS LICENSEWARE	1 - 21
AMICUS	1 - 26
AMIGOS	1 - 12
FISH	160 - 470
PICS PD	1 - 300+
T-BAG	1 - 49
SD - DISCS	1 - 40
S.N.A.G.	1 - 11

() Denotes the number of disks
* Requires 1Mb or more

P.C.S. PRICES FOR PUBLIC DOMAIN ARE AS FOLLOWS:

UK	
1-5 DISKS.....	£2.00
6-10 DISKS.....	£1.75
11-20 DISKS.....	£1.50
21+ DISKS.....	£1.25
EUROPE	
1-5 DISKS.....	£2.50
6-10 DISKS.....	£2.25
11-20 DISKS.....	£2.00
21+ DISKS.....	£1.50

REST OF THE WORLD

1-5 DISKS.....	£3.00
6-10 DISKS.....	£2.75
11-20 DISKS.....	£2.00
21+ DISKS.....	£1.75

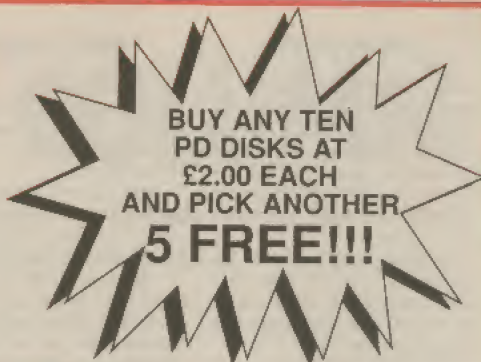
P.C.S. INTERNATIONAL PD
FREEPOST WNS 157F
HINDLEY, WIGAN, LANCOS WN2 3BR

This is only a small collection of our vast range of Public Domain software. If you have any PD Disks that we do not have we will gladly swap on a one to one basis. We have demos, utilities, business, comms and animation. If you want any PD disk that is not advertised then give us a ring on the above number. Please note to all our customers we now offer a FREE Post service on all orders. Modem users you can E-mail us on Prestel 942521577 or Telecom Gold MIK: 3311. Catalogue Disk £1.00.

VIRUS FREE PD

Amiga Public Domain Software

OVER 1500 PD DISKS AVAILABLE
PD SOFTWARE HELPLINE
THOUSANDS OF SATISFIED CUSTOMERS
OVER 100 DISKS ADDED EVERY MONTH
MOST ORDERS SENT WITHIN 24 HOURS
ALL DISKS DISTRIBUTED VIRUS FREE



OVER 1500 PD DISKS CATALOGUED

PD STARTER PACK 3

Only £5.00 inc. p&p

Essential Utils 1
The Bad Bart Dub Mix
Frantic Freddy
Master Virus Killer
Catalogue Disk

CLIP ART Vol. 2

Another 3 great disks full.
Only £5.99 inc

**Official
AMOS PD
Disks**

Now Available.

AMOS Licenceware. £3.50 a disk

LPD1 Colouring Book
LPD2 Arc Angels Maths
LPD4 Thingamajig 1 Meg
LPD5 Jungle Bungle 1 Meg
LPD6 Pakadu + Sprites
LPD7 4 Way Lynx 1 Meg
LPD8 Work + Play 1 Meg
LPD9 Amos Assembler
LPD10 The Word Factory
LPD11 Go Getter 1 Meg
LPD12 Hypnotic Lands 1 Meg
LPD13 Jigmania 1 Meg
LPD14 Play It Safe 1 Meg

Games Galore Volume 1-4

Contains over 30 PD games
spread over 4 disks.
Including Drip, Amoeba,
Chess, Yahzee, Tic-Tac-Toe
Sky Fight, Welltrix, Asteroids,
Ping Pong and loads more.

Only £5.00 inc

GAMES

843 METAGALACTIC LLAMAS
1064 LETTRIX (GREAT)
1020 MASTER OF TOWN
1204 WET BEAVER TENNIS
849 THE HOLY GRAIL
850 BREAKOUT CON KIT
830 QUIZMASTER
670 MONOPOLY
595 CAVE RUNNER
1209 WACKO IN WONDERLAND
832 AGATRON GAMES
1466 RETURN TO EARTH
1440 MEGA GAMES Vol. 1 Disk 4
1421 BIONIX II
531 BLIZZARD
530 PACMAN
509 PARADROID
1207 FRANTIC FREDDY
505 DRIP
255 FLASCHBIER
856 XENON 3 ETC
117 MORIA RPG
154 TRACK RECORD 1 MEG
534 GAMES DISK 1
1179 CHESS ETC
1184 MASTERMIND ETC
Full details available by request

UTILITIES

659 ESSENTIAL UTILS 1
1206 MANDLEBROT MAKER
1208 DATABASE WIZARD
1078 ESSENTIAL UTILS 2
1099 PRO TRACKER 1.1
1202 RSI DEMO MAKER
1146 ICON MAGIC
1151 C-LIGHT
1156 DRIVER GENERATOR
1368 SPECCY EMULATOR
1310 MVK 21
1469 A BRIDGE
1465 SLIDESHOW MAKER
1445 CLOUD & FRACTALS
1422 DEMO MAKERS
1399 SCENE GENERATOR
1311 DISK IMMUNE
1229 THE RIPPERS GUIDE
1165 AUDIO UTILS
1162 HOME UTILS
1156 DRIVER GENERATOR
923 PRINTER DRIVERS
901 VIRUSCOPE
1470 MED V3.0
671 RIM DATABASE
613 202 UTILITIES
380 TRS UTILS 10
381 TRS UTILS 11
334 LE' COPIERS

Adult disks

100's to
choose from.
Including Games,
Slideshows &
Anims

Do the Bartman

A 3 DISK VERSION OF
THE No.1 HIT SINGLE
ONLY £3.00 inc P&P

MASTER VIRUS KILLER 2.1

Can now detect 124
Viruses/Bootblocks

ZX SPECTRUM EMULATOR

Now you can run
Spectrum software
on the Amiga

**EXCLUSIVE WARE
CROSSED SYSTEM**
MEGA FAST SHOOT EM UP
SILKY SMOOTH SCROLLING,
DIGITIZED SFX & SPEECH,
PUZZLES AND MORE.
1 Meg Needed.
EXCLUSIVE TO US
Only £3.99 inc P&P
Crossed System is NOT PD

Blank 3.5" Disks

Only **40p** each



Catalogue Disk Available at £1.00 sent FREE with all orders



Send Cheque, or Postal Order to:

**VIRUS FREE PD (Dept NCE), 23 Elborough Rd, Moreton,
Swindon, Wilts, SN2 2LS, England.**

Tel: 0793 512321 Fax: 0793 512075

All disks £2.00 each unless stated. Prices include P&P in UK. Minimum order of 3 Disks.
Overseas orders welcome, but please send Euro cheque or Bankers draft with order and add £3.00 towards P&P.

- ▼ Expensive initial purchase.
- ▼ Far higher cost-per-page than normal laser printers.
- ▼ Requires its own special paper.

BUBBLING UNDER



● Nintendo's *Super Famicom* launched to the Japanese public last year, is at last set to appear in a modified form in the

USA this summer. It should reach Europe in 1993.

● Owners of imported machines will also be pleased to hear that Electronic Arts has three new *Super Famicom* titles. Well, new-ish, for these are cosmetically enhanced conversions of existing Sega MegaDrive releases... Joining *Populous* on the *SuperFamicom* will be the basketball simulation *Celtic Versus Lakers*, *John Madden's Football*, and *PGA Tour Golf*. Could this affect the loyalty of MegaDrive owners? We asked Electronic Arts' PR Manager Simon Jeffrey. He believes "it will vary from title to title. The *Super Famicom*'s specialities lie in different areas to the MegaDrive's. Sound is one of its strongest features, and this is of major interest for us, especially with Rob Hubbard writing our tunes. He's done some great stuff for the Sega and he's been itching to get his hands on the *Super Famicom*'s Sony chip for sometime, so you really will notice the difference."

The quantity of home computer to console conversions is increasing, especially with more and more developers keen to move on to writing for the more financially rewarding consoles. The situation could work in reverse - EA for one isn't ruling out the possibility of converting, say, *John Madden's Football* to the Amiga.

"Consoles and home computers can sit side by side. There are different mentalities of owner. Some buy a home computer because there is still the premise that you can do other things with it, more so in Europe where people are more suspicious of the idea of computers purely for home entertainment."

And what of Electronic Arts' vision of the future of console software? "I think you'll see quite a few polygon games appearing," says Simon. "Sega has licensed *Abrams Battle Tank* from us and has converted it to the MegaDrive for release in October. In September we're shipping *F-22 Advanced Tactical Fighter* for the MegaDrive - and that's a polygon-based flight simulation."

Games Week

Riding along on the crest of a software wave, Gary Penn surfs up the news, views, previews and reviews of the latest happening items...

Good news for anyone who can't afford much more than the cheapest of budget titles... French publisher Ubisoft is releasing five compilations of former full-price titles this summer, with a further five collections due to appear before the end of this year. *Magnum* (£26.99) brings together a diverse mixture of simulation and arcade action, with Ubisoft's very reasonable *Pro Tennis Tour*, the motorcycle racer *RVF Honda* and *Oriental Game* (which takes its combination of events a little too seriously for my liking) - and two run-of-the-mill Dinamic titles: the arcade adventure come run-'n'-jump romp *Satan* and the slightly less runny and jumpy *After The War*.

The Winning 5 (£29.99) has a content no less varied but is exclusively a Ubisoft affair. The collection comprises the mediaeval adventure *Iron Lord*, the vampire-orientated arcade adventure action of *NightHunter*, the sickeningly cute Gaunlet-inspired *Puffy's Saga*, and two quite respectable arcade adventures: *Twin World* and *Sir Fred*.

Cassette-based Amstrad CPC, Spectrum and Commodore 64 users need not feel left out, for there are two compatible compilations coming... *The Ultimate Collection* and *Six Appeal*, both featuring six titles and priced at £14.99. The Ultimate Collection's star attraction - Geoff Crammond's superlative *Stunt Car Racer* (first



● *Stunt Car Racer*: just as fast, but at half price.

released on the MicroStyle label) - is joined by three titles from Ubisoft and two from Spanish publisher Dinamic. Ubi's contributions are the future sport *Skatewars*, the atmospheric cursor-controlled adventure *Zombi*, and *ProTennis Tour*. The Dinamic duo comprises *After The War* and the butt-kicking blaster *AMC*.

The saucy-sounding *Six Appeal* (which is also available in diskette form for £19.99 on the Commodore 64 only) has just that. The most appealing of the six is Core Design's *Rick Dangerous* (first released on the Firebird label). The Firebird-produced conversions of Jaleco's arcade shoot 'em up *P-47* have their moments, as do Dinamic's *Satan* and Ubisoft's *Twin World*, *Puffy's Saga* and the peculiar arcade-style puzzler (for want of a more appropriate term) *Pick 'n' Pile*.

Last but not least, there's fun to be had for all the IBM PC family and

TOP 10 SIXTEEN-BIT GAMES

Rank	Game	Platform	Developer
1	NE <i>Eye of the beholder</i>	US Gold	AG
2	10 <i>Hero Quest</i>	Gremlin Graphics	ST AG
3	8 <i>Monkey Island</i>	US Gold	AG PC
4	6 <i>Lemmings</i>	Psygnosis	ST AG
5	1 <i>Defender of the Crown</i>	Mirror Image	ST AG PC
6	9 <i>Gods</i>	Renegade/Mindscape	ST AG
7	7 <i>Fantasy World dizzy</i>	Codemasters	ST AG
8	5 <i>North and South</i>	Digital Integration	ST AG
9	2 <i>Steve Davis World Snooker</i>	CDS	ST AG
10	20 <i>Ninja Rabbits</i>	Micro value	ST AG

ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible OT = Other
Chart compiled by Gallup. © European Leisure Software Publishers Assoc.

GAMES REVIEW

TOKI

Ocean* Amstrad Cartridge £24.99, Commodore 64 Cartridge £19.99, Spectrum Cassette £10.99, Amiga & Atari ST £24.99
Planned Versions: None



▲ The first end-of-level Boss encountered is this fellow. He leaps around the screen, making a grab for Toki and frequently issuing forth a string of four bouncing chimp-like beings. The Bosses get weirder still further into the adventure. A floating Michelin Man-like throws bouncing eyeballs at Toki, and a large, long-legged creature spits out letters spelling out the word BURP!

The course of true love never runs smooth, especially when your missus has just been abducted by a nefarious magician who, as a parting gesture, knocked you down to the lower rungs of the evolutionary ladder. The once rock-hard Toki is now an ape. A reunion and revenge are on the cards - but Toki's rival isn't dealing with a full deck. His world is split into six, every-way scrolling zones packed with platforms, ladders and bizarre beasts.

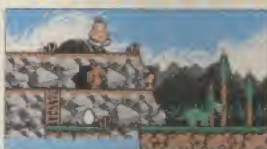
Being an ape does have advantages though, namely increased agility to aid negotiation of the environment, and the socially unacceptable ability to spit in almost any direction, which comes in handy when it comes to removing adversaries from the scene.

Toki's flopping power is occasionally boosted and even turned to flame thanks to special icons left lying around. What a pity they don't last long. Tad Corporation's coin-operated cult favourite has come to the home-machines in style. These are cracking conversions all round, every one capturing the tough but playable and rewarding nature of the arcade parent. A special mention must go to the near-perfect Amiga version complete with its parallax scrolling and attractive 32-colour display.



• Rick Dangerous: going underground.

compatible kin with five racey releases collectively known as *FastLane*. *Stunt Car Racer* once again takes pole position. Just for the (track) record, the other four titles are Spectrum HoloByte's *Vette*, Electronic Arts' ageing but acceptable *Ferrari Formula 1*, Domark's adequate conversion of Atari Games' *Hard Drivin'* and Microid's lacklustre *Highway Patrol*.



• Quest for food ensues in Prehistorik.

"Half human, half hungry" - that's how French publisher Titus describes the neanderthal star of its new run 'n' jump romp, *Prehistorik*. This club-wielding caveman needs food, and so he undertakes a journey across the scrolling fields of Antarctica and through darkened caverns and Tropical jungles. He's not the only one who's hungry though - there are species of dangerous dinosaurs roaming the land too. Priced at £25.99, *Prehistorik* should be available for the Amiga, Atari ST and IBM PC and compatibles by the time you read this. ■

SUPER CARS Gremlin • Amiga, Atari ST

The choicest cuts of information and advice, courtesy of the authors, collectively known as Magnetic Fields.

THE SHOP



When the shop is visited the equipment costs are chosen at random from between a quarter of the maximum price and the maximum. The trade-in prices are simply three-quarters of the sale price shown. The following chart should prove useful for wheeler-dealing wheel-spinners...

ITEM	BUY	SELL
FRONTMISSILE	100 - 400	75 - 300
REAR MISSILE	150 - 600	110 - 450
HOMING MISSILES	375 - 1500	280 - 1125
SUPER MISSILE	250 - 1000	185 - 750
MINES	200 - 800	150 - 600
TURBO JUMP	125 - 500	90 - 375
ARMOUR	750 - 3000	560 - 2250
RAM	250 - 1000	185 - 750
ENGINE	1250 - 5000	935 - 3750

FRONT AND REAR MISSILES. They have their uses, sure, but they are best used to fund the purchase of other weapons. Buy them cheap then sell them when the price is right. HOMING MISSILES Unbeatable

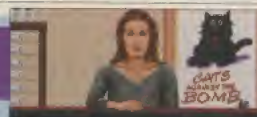
all-round entertainment, but best used to take out the opposition on fast courses or to clear narrow roads.

SUPER MISSILE Useful in tunnels where you can't see what's coming or on courses with gates where cars suddenly appear coming the other way.
MINES Keep the opposition off your tail - but don't forget that the mines do self-destruct.
TURBO JUMP Use it to leap to the front of the queue at the very start of a race (ie when standing still) or for jumping trains (which is best done from a distance of approximately three cars).
ARMOUR Must Buy, but not at any cost. Be frugal. And be prepared for the hard level by buying all three grades. **RAM** All well and good, but it doesn't do your car any favours either. **ENGINE** Increases your car's top speed (which is near-essential on higher levels) but don't sell your granny to white slave traders to get one.

COMMUNICATIONS

Don't turn them off - these screens are a good source of cash and points (provided you know the answers). On most screens it's wise to be self-confident but not cheeky. When it comes to dealing with the Transport Inspector, keep your answers as straightforward as possible. One of the answers is always RIGHT, one is always WRONG, and the other could go either way so just because you got it right or wrong the first time, doesn't mean it will necessarily be so the next time around - haha!

COURSE FEATURES



JUMPS Keep as straight as possible at launch - unless there's a corner involved. In which case jumping at a slight angle can avoid a collision with a wall on the other side. If you get stuck in a traffic jam before a jump, wait until the mess clears before taking a run-up. **CROSS OVERS** Don't cheat - otherwise the lap won't count. Even if you get knocked off course, go back and clear this obstacle. **OPENING GATES** It's usually worth waiting for them to open, so do so. All the gates on the same course open and close at the same time, so it's easy enough to tell when the time is right. Bear in mind that you can just about squeeze through closing gates. **TUNNELS** So you got stuck and couldn't get out. The next time it happens, keep turning until the screen scrolls in the correct direction then make your move.

GENERAL ADVICE

HANDBRAKE TURNS These are best employed on tight corners. As the bend is approached, take your finger off the accelerator and turn the car. When it's halfway through the turn and thus the desired direction, hit the accelerator. **OVERTAKING** This is usually easily achieved on the straights, although it is possible to do the deed on the corners... Take the inside line and bump the other car. By the time it gets its bearings you should be long gone. Remember that crashing into another car slows you both down, so there may be times when you need to be patient and wait for a more suitable overtaking opportunity.



▲ In true Ghosts 'n' Goblins style, an overview of the world to be conquered is shown before play - just to let you know where you stand.

▼ This sizeable slice of the first zone serves to illustrate the attractiveness of Toki's odd, and hostile, environment. Note the 16-ton weight balanced on the see-saw to the far right - the combination's used to shoot Toki to new heights.





• Sound Master II has all that you'll need for PC sound including a headset, MIDI ports and comprehensive documentation.

Like most sound cards, Sound Master II comes from the US. This is hardly surprising considering that, as well as being a business machine, the PC is seen as much more of a home leisure machine than here in Britain. Thus the need for decent sounds.

Manufacturer Covox claims that the Sound Master II card and its associated peripherals offer a complete Multi-Media sound package compatible with all major PC specifications and existing industry standards. So what's it all about?

POWER OF SPEECH

Most important to the PC gamer is Sound Master's compatibility with industry standard sound-card Ad-Lib.

This means hundreds of programs boasting sound drivers for the Ad Lib board can benefit from Sound Master II. As well as the ability to enhance the sound of games, there are several other features that make it a fascinating and well specified product.

The board can sample and edit sound, work as a MIDI interface, function as a polyphonic multi-tyrbral synthesiser and recognise and synthesise speech.

Software is provided to do all of this, and a MIDI record and notation package allows you to record music either on the screen or from a musical instrument and view and print it as manuscript.

In the Soundmaster II box is an 8-bit PC expansion card, a headset with built in microphone, MIDI cables, a speaker, software and manuals. Installing the board is a simple matter of unplugging the PC, opening it up, sliding the card into any available eight or sixteen bit slot and securing it. No problems there.

There's an included cable to allow the Sound Master II to connect to the speaker port on the PC's main system board and this caused a slight panic due to the fact that the portable we planned to test the card on didn't have an accessible main board.

A switch to a desk top machine brought the board

PC SOUND SOLUTION

The PC's sound is normally limited to a diminutive beep. Keith Pomfret listens to a soundcard that puts the PC into the Amiga sound league...

into view but some ingenuity was needed to make the connection and persuade it to work. Once this had been done, it was a simple matter to put the PC back together and check the rest of the package's contents.

PASS THE PORT

With the board installed, there were inputs for line/microphone and a low level signal input, a volume control, mini-jack audio output and a nine pin port for connecting the provided MIDI cable.

The hardware was installed and connected in about 15 minutes and with the machine re-assembled it was time to run the test software to make sure that all was OK. All the tests were passed with flying colours and it was on to the test proper.

Sound Master II buys you the facilities to do a great deal more than listen to the pleasant screeches of dying aliens

Most soundcards for the PC serve a simple function of greatly enhancing the noises that programs make. Games benefit from more realistic sound and the hideous IBM beep is done away with in favour of something a good deal more melodic. While most simple soundcards stop there, the extra you'll pay for Sound Master II buys you the facilities to do a great deal more than listen to the pleasant screeches of dying aliens.

In order to be able to process sound other than that made on its own synthesiser chip, it has two inputs. The first is a low level input suitable for dynamic pattern microphones of recording studio quality. The second is a high level input suitable for signal line or microphones working on the electret crystal principle. The analogue inputs are boosted by a pre-amplifier.

GOOD AS THE AMIGA?

Digital input is handled by an 8-bit AD converter which allows a sampling rate of 25KHz. This is comparable to digitisers being used with the Amiga and is certainly a high enough sample rate to allow decent clarity of the sampled sound.

Once the sound is into the PC, it can be edited from existing files from itself or other soundboards. Waveform editing software allows the sound to be edited on the fly or from files. Real time editing includes pitch changing, harmony building, flanger and chorus effects, echo, reverb, and distortion.

To compliment the real-time effects there is an on screen waveform editor that features a graphic display

of the section of the sound that you're working on. Using this screen you can cut, paste, splice, invert filter, move and adjust any aspect of the sounds.

Once the sound is processed it is output via a digitiser offering the same sample rate as commercial CDs, although the hardware isn't able to produce CD quality sound just yet.

If a digital or analogue sound source isn't available, there's an on-board multichannel polyphonic synthesiser. This uses FM synthesis to voice up to nine melodic sounds or 11 if percussion is included. Analogue synth effects such as vibrato (frequency modulation) and tremelo (amplitude modulation) and combinations of both are possible. Because the synthesiser is Ad Lib compatible it is possible to use it with professional MIDI software that can drive the AdLib.

To allow two cards to be driven simultaneously or to avoid address problems, the port addresses of the Sound Master can be simply altered. A MIDI lead is provided and configures the card for a pair of MIDI ports (in and out). MIDI software can drive the card internally or externally and the availability of all of these features on a single card solves all of the PC sound input output problems and yet only uses one expansion slot.

PICKING UP STRAUSS

Finally, and in some ways most impressively, Sound Master II has software that allows speech synthesis and voice recognition. The current version can recognise up to 1,000 voice commands, so saying to the PC, "Play me some Strauss" could become a reality.

The voice recognition software is a cut-down version of Voice Master Key and allows you to train the computer to recognise your voice. Voice commands are simple using a headset provided with a built in microphone. With this powerful facility, it is possible to password protect your computer in a way that means that if someone finds out your password, they still can't get in because they haven't your voice. This is fine until you get flu and your voice goes husky!

EARS THE VERDICT

At £207 it's more expensive than some soundcards (although still cheaper than the Roland LAPC1). Its strength is in the specification that included everything you could possibly want. It's costly but worth every penny. Your ears will never cringe to the vile sounds of your PCever again. ■

The PC Sound Master features MIDI, Voice actuated software, speech synthesis, digitising and sound editing. Price £207 including VAT. Available from Covox Europe on 0983 867050.

FOR AND AGAINST

FOR

- ▲ Well specified
- ▲ Well featured
- ▲ Ad Lib compatible
- ▲ Good documentation

AGAINST

- ▼ Software not as user friendly as some
- ▼ Good value but £200+ is still a lot to pay if you only want a soundcard

PD & SHAREWARE

who do you get yours from?



- There are many PD libraries around but do they offer you....
- ★ Huge collection, thousands of programs on over 3000 disks
 - ★ Same day service - 1st Class post - GUARANTEED
 - ★ Knowledgeable staff on hand (no 'phone after six and ask for Fred!)
 - ★ Three years experience collecting and distributing PD & Shareware to satisfied customers all over the world.
 - ★ Send £1.00 for catalogue - free with order - please request and state MAKE of computer CLEARLY.

AMIGA

currently over 800 disks in our catalogue, including Fred Flah, APDC, AMICUS, Panorama etc. Our own SOF collection is so good other libraries stock them now and of course we are exclusive distributors of the fabulous UGA disks. All are authorised, menu driven and so very easy to use, probably the best collection available! We also run an Amiga Club, ask for details.

ATARI ST

We currently stock over 800 disks full of PD/Shareware for these machines, containing every imaginable type of program! Choose from ALL the Public Domain, not just "a selection". If you are new to ST'ing why not join "Clubville", our popular user group, £6.50 gets you newsletters, offers, special prices on goods, 5% Off blanks/PD etc.

IBM PC

(and compatibles)
Thousands of the most popular Public domain and Shareware programs in our current catalogue, all available on either 3.5" or 5.25" format, (if ordering opposite) state which. Whatever type of program you may require, we've probably got it.

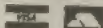
MEGA PACK - £19.50 (£14.50)

5 PD disks + 5 blank disks
plus a Library case
(Selection of current popular titles)
INTRO DISK - £1.50
(Atari or Amiga only)
VIRUS KILLER DISK - £1.50
(state machine clearly)

(prices in brackets for 3.5" disks, state preference)

24 Hour orderline on

0705-266509



SOFTVILLE

Unit 5, Stratfield Park,
Electra Avenue, Waterlooville,
Hants. PO7 7XN

COMPUTER AUCTION

BY ORDER OF MAJOR FINANCE
COMPANY & LIQUIDATORS

ANTICIPATED OVER 400 LOTS OF
HIGH QUALITY EQUIPMENT.
X.T.s, A.T.s, 286's, 386's & NETWORKS
I.B.M. PCs, APRICOTS, OPUS,
COMPAQ, VICTOR, SANYO

LASER PRINTERS, COLOUR PRINTERS,
DOT MATRIX, DAISY WHEEL
SHARP, EPSON, CITIZEN, JUKI, RICOH,
CANON, QUME, CENTRONICS

DEDICATED WORD PROCESSORS
OLIVETTI, PANASONIC, IMPERIAL

RML NIMBUS CAD SYSTEM (ARCHITECTURAL)
COMPLETE WITH A1 PLOTTER & PENS
GRAPHICS TABLETS, STANDS & ENHANCED
CAMBRIDGE GRAPHICS MONITOR

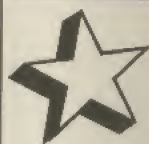
ALSO PHOTO-COPIERS, FAX MACHINES,
CASH TILLS AND RETAIL
MANAGEMENT COMPUTER AND TILL SYSTEM.
TELEPHONES, MODEMS.

SALE COMMENCES 11AM SATURDAY 8TH JUNE

VIEWING

**FRIDAY 7TH JUNE 9.30AM -
4.30PM MORNING OF SALE 9AM - 11AM
CATALOGUES £1 (AVAILABLE ON VIEWING DAYS)
AT DERBYSHIRE TRADE CENTRES**

ADAM BEDE CENTRE, DERBY ROAD,
WIRKSWORTH, NR. DERBY
TEL:- 0629 825608 FAX:- 0629 825606
SEND FOR MAIL LIST



POWER

UP



POWER UP IS A SUPERB NEW CLUB, EXCLUSIVE TO SEGA USERS. A UNIQUE SWAPPING SERVICE BETWEEN CLUB MEMBERS, ADMINISTERED BY POWER UP, ALLOWS YOU TO EASILY AND SAFELY SWAP UNWANTED CARTRIDGES, FOR A GAME OF YOUR CHOICE. WE SUPPLY ALL POSTAGE AND PACKING, TEST ALL GAMES AND CUT OUT THE RISK OF SENDING YOUR PRECIOUS GAMES TO COMPLETE STRANGERS. WITH REGULAR COMPETITIONS, A MONTHLY NEWSLETTER, AND ADVICE ON COMPLETING THOSE REALLY TRICKY GAMES, POWER UP IS A MUST FOR ALL SEGA ENTHUSIASTS.

MASTER★MEGA

FOR YOUR FREE INFORMATION PACK SEND A STAMPED
ADDRESSED ENVELOPE TO

POWER UP, P.O. BOX 889, MILTON KEYNES, MK14 5YH.

WIN! WIN! WIN! WIN! WIN! WIN! WIN!

DIGICOM EXCLUSIVE!

Commodore Amiga A500

PRICE CRASH

£299.00

inc VAT & Delivery

- ★ Includes:
- ★ Amiga A500 512K Keyboard
- ★ Built-in 3.5 DS/DD 1 Megabyte Disk Drive
- ★ Latest UK spec Kickstart 1.3 Machine
- ★ Workbench 1.3, Extras 1.3, Amiga Basic
- ★ 4096 Colours
- ★ Digital Stereo Sound
- ★ Speech Synthesiser
- ★ Notepad Word Processor
- ★ Mouse
- ★ TV Modulator
- ★ ...and all leads to connect to your TV!

LIMITED STOCKS! - ORDER EARLY

Credit Card Orderline Telephone (0908) 378008

All major credit cards accepted!

DIGICOM

Unit 36-37, Wharfside,
Fenny Stratford,
Milton Keynes,
MK2 2AZ

Callers welcome at our showroom - Wharfside is opposite the Bridge Pub on the A5 Watling Street at Fenny Stratford

PALMTOP POWER



First seen in this country at April's Which Show, Hewlett-Packard and Lotus's acclaimed HP 95LX palmtop PC, will be in the shops in two weeks time. Stuart Clark got his palms on one ahead of the hordes...

Look at the relative failure of the innovative Poquet PC with the benefit of hindsight and you could easily conclude there's no market for palmtop PCs. Sure, it's small, light and uses memory cards for storage, but the keyboard's awful and it's far too expensive.

Poquet came up with some good ideas but failed to capitalise on what has to be one of the biggest markets of the nineties. Both Hewlett Packard and Lotus know this and are well known as heavyweight purveyors of respected hardware and software. HP with its long history of PC manufacture, Lotus with its quasi-industry standard business analysis software 1-2-3 - the biggest selling program in the world. So it's not much of surprise to see the two companies coming together to produce a portable platform to target the 14 million 1-2-3 users world-wide.

The theory is straightforward enough. Lotus 1-2-3 is a world standard like the PC. Its users increasingly wish to take their worksheets, graphics and macros wherever they may be. What they therefore require is the applications software on read only memory (ROM), so it's always there, embodied in a small, lightweight hand-held which can easily be hooked up to a desktop PC for transferring files.

So, after years of development work in conjunction with Intel, you have yourself a £449 +VAT mini-marvel with one-key access to all applications, built-in organiser tools, support for third party software and communication capabilities. And what's more it's the size of a cheque book and weighs only 11 ounces. Coupled with one of Touchbase's Worldport range of portable fax/modems and a printer like Kodak's miniature Diconix and you finally have the office any money-man can carry in his jacket. Poquet must be very worried people indeed. But enough of the promise - How does this palmtop perform?

UNDER THE HOOD

Let's first have a look at what powers it. Two AA batteries actually. These drive the heart of the 95LX: its custom PC XT chipset developed by Intel which reduces the size of a standard PC from five integrated circuits to two. Occupying only 2.5 by 3.25 inches this tiny motherboard offers performance which HP say is two and a half times more powerful than a standard XT. Running on this is the first built-in implementation of MS-DOS ROM. Microsoft's operating system, version 3.22, which is booted from read only memory. Input, to memory card loaded software, is via a neat QWERTY keyboard, with a 16 line x 40 character super-twist LCD

screen displaying output.

The keyboard is virtually useless unless you can't type properly. That's because only two fingers can comfortably fit in this constrained space. What's more, the keys are more like calculator buttons than 'real' keys so word processing has annoying difficulties. But as a formulae and number input device, it's fine - which is presumably why 1-2-3 is on-board. Lessons have been learnt from the Poquet role model - the HP/Lotus market is for the money-men; leave the palmtop word processor to someone more reckless.

The screen is more of an innovation though since it is backlit by 12 volts rather than the more usual 5V and can thus be read in a greater number of positions and lighting conditions.

With the £395 Lotus 1-2-3 on-board, this palmtop will cost you only £54!

RAM cards can be slotted home in the built-in memory card drive to store portable data. All this is contained in a unit measuring only 6 inches wide, 3.5 inches long and one inch high. Power, supplied by the batteries, with a backup lithium unit to retain RAM when you change batteries, is ingeniously conserved. The microprocessor actually shuts down between keystrokes and the entire system goes to sleep after five minutes. Both these features allow a claimed average battery life of one month. There's also a mains adaptor you can hook up to.

READY TO ROLL

Besides 1-2-3 the 95LX has an appointment book, a telephone book, a memo pad, a file manager, a communications program and a financial calculator with tons of macros. What makes the machine nice to use is that there's a common interface to all the software. You can cut and paste data easily between applications and each one is always open. This means that in switching between tasks you are always returned to where you left off. This is plain common sense - it should be *de rigueur* in all notebook PCs.

With DOS 1-2-3 and the other applications in ROM, a quick check on the system status shows there's about 380K available for running RAM resident programs. You can use the built-in utility to set aside areas of this spare memory as a C drive RAM disk.

MAKING CONNECTIONS

You can also run any DOS applications you can find on memory cards - not a lot of well known ones at the moment - or, software protection allowing, download them from your host PC as long as you can configure their screens to the 95LX's 16x40 display. Thus the only means by which you can run DOS programs will be by using the machine's serial interface. The software included to make the most of this will also run on your host PC, so you can continually update both machines with new data by simply connecting the two with a serial cable transferring data at 57,600 bits per second - quite a healthy baud rate.

The other neat option is an infra-red connection for transferring files between two 95LXs. Here data can be copied between machines at up to 2400 baud as long as the machines are less than eight inches apart.

SIZING UP THE COMPETITION

The Atari Portfolio and Poquet PC are the obvious peers of the 95LX. The Poquet scores over both in that it offers an 80 character display and its keyboard is, these days, considerably better than the 95LX's. The price is prohibitive though and you don't get Lotus 1-2-3. The Atari Portfolio is a very popular machine but its display is even smaller than the 95LX and it only has 128K of RAM on-board. Of course, it only costs £199. The choice really depends on what you want a palmtop for. If spreadsheeting is your main use then the 95LX is the one to go for - it's PC compatible and has the £395 Lotus 1-2-3 included. So you could conclude that with this on-board this palmtop will cost you only £54! ■

DATA IN THE PALM OF YOUR HAND

All prices include VAT

HP 95LX palmtop PC	£527
Connectivity pack	£80
128K RAM card	£148
512K RAM card	£328

More information on 0344 369369

SIZING UP THE PROS AND CONS

FOR

- ▲ Lightweight and compact
- ▲ Easy to use built-in software
- ▲ incredible bargain
- ▲ Good screen

AGAINST

- ▼ Keyboard lacks feel
- ▼ Unsuitable for word processing

MULTI-TASKING PCs

The facility to seem to have a number of applications running simultaneously is not, of course, true multi-tasking, but being able to flick between programs in suspended states comes very close for most practical reasons. *Switch-It* is a utility which allows you to do just that. Each application can be highlighted on a user configurable menu to be launched, be given its own full screen window and full functionality and yet with one key stroke you can switch to other programs.

This includes the DOS command line; you can trawl through your last 30 DOS commands to save retyping and flick between the command line and any applications. In addition, other Terminate and Stay Resident (TSR) utilities are unaffected; without taking valuable memory space away from your main applications. Moreover you can use *Switch-It*'s screen and memory handling to transfer screen data between programs; effectively integrating all your applications. Perhaps its most endearing features are the scope it gives you to continue working in one program while loading another and the neat facility to have multiple copies of the same program running simultaneously.

SETTING THE SWITCHES

Switch-It is not copy protected so installing it is simply a question of copying all the files on the single 3.5 inch or two 5.25 inch floppies onto your hard disk. Typing **INSTALL** at the DOS prompt takes you through a simple series of configurations. You are able to specify which directory path the program should reside in and whether you wish *Switch-It* to autoloan each time you start up your machine. Then it automatically scans your hard disk for executable programs and builds its own menu ready for later switching. You can, of course, add to or subtract from the programs it has chosen, but for now this automatic selection is a very useful feature.

CHANNEL SWITCHING

Once up and running you are presented with a scrollable menu window, occupying roughly a quarter of the screen, with program names which can be highlighted either by using the up and down arrows, entering the number *Switch-It* has allocated it, or by typing in the first few letters of the program name. Pressing Enter performs the actual switch.

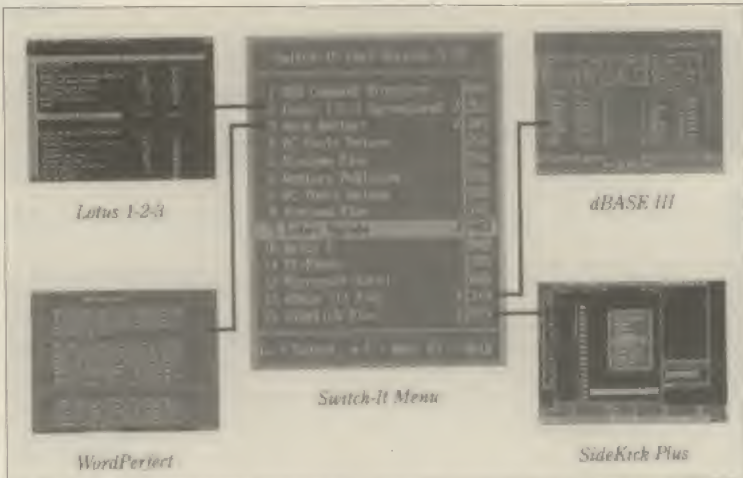
Next to the application names are ticks which represent the programs currently in suspension and can be activated by hitting the F4 key; the active program toggle. Also on this menu are readouts of the memory allocated to each program; which can be redefined. By hitting F1 while this menu is on screen, a help window appears which will explain all these items in more detail.

There are three different ways of switching

EXTENDED MEMORY SUPPORT

Switch-It can swap your programs from the 640k conventional memory into EMS or extended memory. Swapping in and out of memory is obviously faster than using a hard disk. To access any extended memory, you need to create a virtual disk or RAM drive (VDISK) to which your programs can be swapped. If you have a 1Mbyte RAM system, with, typically, 380K of extended memory, it's best allow to leave up to 256K for a RAM disk and leave the rest for *Switch-It*.

Do you use a hard disk PC? Do you want instant access to any of 100 of your favourite programs while you're running others? As Simon Walsh finds, *Switch-It* could be the answer to your PC productivity prayers...



■ Whether you're in the middle of Lotus 1-2-3, WordPerfect or dBase, a keystroke moves you instantly to another program.

between programs. The first is to use the menu screen just mentioned, but after you've become more familiar with the utility you can use either the active or hotkey switches. Active program switching merely relies on pressing the ALT up arrow or ALT down arrow keys together within any program and you will switch accordingly between the ticked applications in the menu screen. Hotkeying is the best way, but requires you to first to load *Switch-It*'s Configuration Editor.

REDEFINING SUSPENSIONS

Here you're able to add new programs to *Switch-It* and rearrange the menu entry order besides setting up your hotkeys. These can be any key or key combination, but it's important to choose ones which don't conflict with the key combos found in the other program you use. The Configuration Editor also allows you to change a program's title on the menu, alter the memory allocated to it, and change its swap area. 'Program arguments' such as the particular default for a .BAT file can be entered here. But the most useful of all user custom key assigning, and enough reason in itself to buy the program, are undoubtedly the mark and transfer facilities.

Put simply, these functions allow you to capture data from one application and move it into another, leaving the first program unaffected. You mark the text or other data you want to transfer by pressing the default ALT-DEL, or whatever custom hotkey you've assigned, which then passes the material to a clipboard or RAM buffer and will stay there until new data replaces it. You then hit ALT-INS to paste the data into the application screen of your choice.

Before marking any text you should really specify what format your receiving program is going to expect - there's no use porting spreadsheet numbers into a word

processor and expecting it to format the material perfectly. So you are able to specify both the sending and receiving format easily with pull-down menus. In addition you can specify whether you want to port a whole screen of data or just a portion of it. If it's the latter, you can specify a rectangle in which text will be highlighted - extremely useful if you only want to port a specific area of a spreadsheet into a word processor. Likewise when transferring text from a word processor, you can specify the start and end by selecting the text with the cursor. Finally you can paste the clipboard into a word processor, modify it and re-transfer it back onto the clipboard.

Switch-It is an extremely useful little program which will pay for itself in no time in terms of increased productivity and hassle-free working. *Switch-It* is available from GuildSoft on 0752 251155 and costs £79.95. ■

THE KIT YOU'LL NEED TO SWITCH

1 Any IBM compatible PC 1 At least 512k memory
1 At least MS-DOS 2.1 1 A hard disk or EMS memory

SHOULD YOU FORK OUT £80?

FOR

- ▲ Indispensable task-switching
- ▲ Cut and paste between any program
- ▲ Easy to get up and running
- ▲ Excellent documentation

AGAINST

- ▼ Does not use a mouse

NEW LOW PRICES

40mb IDE Drives, 1 MB RAM
1 Parallel, 2 Serial Ports
Slimline Chassis, 4 Free Slots
102 Key UK Keyboard
Super VGA, DOS 3.3

OSICOM

	MONO VGA	COLOUR VGA
286/12 Mhz	£887	£1027
286/16 Mhz	£927	£1067
386SX/16 Mhz	£1089	£1229
386/25 Mhz (2Mb)	£1389	£1529

Tower Systems
128KB Cache, 130mb Drives
4Mb Memory, 5 Drives Bays
5 Free Slots, 1024 X 768 SVGA

OSICOM

	MONO VGA	COLOUR VGA
386/33 Mhz	£2039	£2169
486/25 Mhz	£2709	£2839

**Two Years On-Site
Maintenance In Price**

ARCOM COMPUTER SERVICES

Alice House, 10 High Street,
Ashwell, Herts. SG7 5NL

EXTRACTS FROM MICRO COMPUTER MART ISSUE 131 DEC 1990

Expansion presents absolutely no
problem to the Osicom Executive Series

The performance of the Osicom Executive
386SX, was flawless, the components fitted
within the computer housing were all of a
high quality and the overall construction was
durable

Quite clearly they represent superlatively
good value for money at this particular
'market' moment in time.

**PRINTER, LAPTOPS, PORTABLES
MOTHERBOARDS, MEMORY UPGRADES
DISKETTE DRIVES, TAPE STREAMERS
+ A FULL RANGE OF BUSINESS
& LEISURE SW AT
GOOD PRICES ARE ONLY A
PHONE CALL AWAY**



If you need more details about these or any other make of
system, call us now for a fast reliable service on

046274 2024

WELL THE PHANTOM HAS BEEN OUT AND ABOUT AGAIN IN SOUTH LONDON!!!! (OK JOHN) WITH HIS COHORT THE RED GARDEN DOING WHAT THERE BEST AT, SCAVENGING AROUND FOR DISCS. (NEXT MONTH RED GARDEN REVEALED)



P.D.

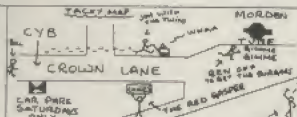
SOFTWARE
20 Discs For £19.00
Or £1.50p Each

PD SOFTWARE AVAILABLE TO
CALLERS ONLY.

10 BLANK DISCS ONLY

£4.95

CYB COMPUTERS LTD
9 CROWN PARADE
CROWN LANE
MORDEN, SURREY
TEL: 081 542 7662
FAX: 081 543 7527



Feed Your ST!

MEMORY UPGRADES

STE	
512K to 1024K	£28.75
2 Megabyte STE Upgrade	£93.75
4 Megabyte STE Upgrade	£168.25
These upgrades are available in both sip and simm types to suit all STEs. Trade-in is given for your existing memory when you upgrade to 2 or 4 Megabyte. £10 for 512K. £20 for 1024K. Very clear instructions included + free multitasking software.	
STFM	
1MB board expands to 2.5MB	£75.00
2.5 Megabyte Plug in upgrade	£150.00
4 Megabyte Plug in upgrade	£248.25

COMPUTERS

All 520 STE Turbo Packs	
TT2 Megabyte RAM 40 Meg HD 32Mhz 68030 32 bit processor excluding monitor	£1839.00
TT Monitor	£459.99
SM124 Monochrome monitor supplied with computer	£Call
512K STE	£315
1 Megabyte STE	£340
2 Megabyte STE	£375
4 Megabyte STE	£450

EMULATORS

PC SPEED	Hardware PC Emulator works 4 times faster than original XT. Supports Hard disk. Mouse, RS232 Printer. CGA, Hercules and Olivetti graphics.
Fitted	£115.00
Supplied and fitted w/computer	£105.00
Supplied only	£95.00
AT SPEED As PC Speed but 7 times faster than XT	
Price as for PC Speed + £100.00	
SPECTRE GCR Super Mac Emulator for the ST Supplied only	£Call

CHIPS Etc.

For upgrading Frontier, TCT and some Mega ST series boards by 2	
16 x 1 Megabit DRAM Chips	£110.00
Megabytes 16 x 256K x 1 DRAM Chips	£36.80
Fitting kit for upgrading STFM to 1MB using above chips	£3.45
ST Mouse Switches	£0.35

Various STE spares available. Please call for assistance

HOW TO ORDER

Prices include VAT.
Add £1.50 P&P to
orders under £5.
Please call before
sending
your computer.

Telephone orders and enquiries welcome on: 081-777 0751
Please make cheques/postal orders payable to

HCS 35 Hartland Way, Shirley, Croydon, CR0 8RJ

Goods normally despatched within 2 days of receipt
Trade-in paid as a refund



COMPETITION

WIN! WIN! WIN! WIN! WIN!

SAVE £500! WIN AN AMIGA BUNDLE

Commodore's First Steps software bundle is the prize on offer this week in the Express £5,000 software giveaway competition. But hurry, this is your last chance.



Summer's fast approaching and we're ready to take the long holiday with not a thought of school. This week is the halfway point of the Commodore First Steps software competition so we're letting you off homework for a few weeks and continuing again with the second half of the competition in the Autumn.

So now's your last chance to take a First Step for now and if you want this wonderful educational bundle you'll have got this weeks answers right.

Included in the pack is an emulator that allows the Amiga to run BBC educational software. Although running BBC software on a BBC must be a waste of the Amiga's potential, it allows access to the thousands of programs already in use in schools. There's Logo, a graphic and list processing language that uses a turtle to teach drawing on the screen. This version can talk too, so it interacts with the user.

Music mouse is a program that

allows musician and non musician to produce complex musical arrangements using either the Amiga's internal sounds, samples or a full MIDI orchestra if you fit a MIDI interface and connect it to modules.

Putting prose to paper is handled by word processor *Pro Write*, with multiple font sizes and multi-task ability a couple of its features.

Infotile is a database that comes with templates for many often used methods of storing data including accounts, phone book, addresses, and so on.

Artistic ability is catered for with *Deluxe Paint II* and output of a printer can be enhanced by *Deluxe Print II*.

Finally, a couple of tutoring packages offer a more structured approach to the educational side of *First Steps* and the package follows the requirements of the National Curriculum.

To win this week's *First Steps* bundle

(worth £500 plus) all you have to do is

answer the following questions and complete the tiebreaker. Send your entry on the back of a postcard or envelope to: The Express First Steps Compo, 29 Monmouth Street, Bath BA1 2BW to arrive no later than 15 June 1991.

1) What do they call a term in the USA

- a) Term
- b) Therm
- c) Fraternity
- d) Semester

2) What computer language is bundled with most home computers

- a) BAD
- b) Machine language
- c) BASIC
- d) Latin

3) What would you put in the drive of a CDTV

- a) Compact disc
- b) Floppy disk
- c) Hard disk
- d) EP

4) What company is there a little of in all of us?

- a) Sellfield reprocessing plant
- b) Chernobyl
- c) National Nuclear Corporation
- d) Commodore

Complete the following in a humorous manner in no more than 12 words;

The bit of Commodore in me is

MAKE SURE YOU GET A COPY OF NEXT WEEK'S EXPRESS

Complete this form and hand it to your newsagent

TO THE NEWSAGENT: Please reserve me copy/copies of *New Computer Express* every week, beginning with issue 135, out on 8 June.

NAME

ADDRESS

TELEPHONE NUMBER

To the newsagent: *New Computer Express* is published by Future Publishing and is available from your local wholesaler. Send back all your Future shop save coupons for entry in a free draw to Kate Hodges, Future Publishing, 30 Monmouth Street, Bath BA1 2BW.

COMING NEXT THURSDAY

Blistering 32-bitter
Atari's 33MHz TT - see how a 68030 ST really shifts

Weird and wonderful?
Your outrageous machines - the verdict begins

WINI WINI WINI
The Pentax A4 flabbed scanner worth more than £1,000

PLUS

- Hot news
- Front End
- Games Week
- Whole Wired World
- Tech Tips
- Circuit City
- Express On-line
- Express Mail
- The PD Column
- Programming
- Columns for: Amiga, Archimedes, CPC, C64, Macintosh, PC, Spectrum and ST

COMPUTER EXPRESS

EDITOR - Andy Stoner

NEWS EDITOR - Tim Smith

REVIEWS/TECHNICAL EDITOR - Keith Pomret

PRODUCTION EDITOR - Julie Tolley

ART EDITOR - Amanda Cook

SUPPLEMENTS EDITOR - Colin Campbell

STAFF WRITER - Dave Golder

CONSULTANT EDITOR (GAMES) - Gary Pann

CONTRIBUTORS:

- Steve Gold - Jason Holborn
- Frank O'Connor - Haydn Fitz-Williams
- Mary Branscombe - Robin Alway
- Ken Courmarin - Andrew Roberts
- Andy Hutchinson - Ian Wrigley
- Rod Lawton - Paul Rigby

CIRCULATION DIRECTOR - Sue Hartley

AD MANAGER - Helen Kirkhope

SENIOR AD EXECUTIVE - Cheryl Beasley

AD EXECUTIVES - Tim Partridge

• Siobhan Kennedy-Coyne

AD PRODUCTION - Frances Wasse

AD TYPESETTING - Terry Mackereth

PRODUCTION TECHNICIANS: Simon Windsor,

Chris Stocker, Jerome Clough

PUBLISHER - Steve Carey

ABC audited circulation July-December

1990:20,204 copies per week

We regret we cannot enter into any personal

correspondence. Technical enquiries should

be addressed to Tech Tips at the address

below. While every care is taken in the

preparation of *New Computer Express*, Future

Publishing cannot be held responsible for the

consequences of any errors that may occur.

• Subscriptions: The Old Barn, Somerton,

Somerset (0455) 74011

• Printed by Redwood Press, Melksham, Wilt

• Distributed in UK and Eire by Future

Publishing (0225 442244), rest of world by

Comag (0695 444055)

© Future Publishing Ltd 1991

30 Monmouth Street, Bath BA1 2BW

CONTACTS

Tel: 0225 442244 Fax: 482018

E-mail: Aspects on 061 792 0260

CIX @ astor

GOLD @ 84:TXT152

PRESTEL @ 01112623

'Your guarantee of value'

This magazine comes from Future Publishing, a company founded just six years ago, but which now sells more computer magazines than any other publisher in Britain. We offer:

Better advice. Our titles are packed with tips, suggestions and explanatory features, written by the best in the business.

Stronger reviews. We have a castiron policy of editorial independence, and our reviews give clear buying recommendations.

Clearer design. You need solid information fast. So our designers highlight key elements by using charts, diagrams, summary boxes, annotated photographs, etc.

More reader interaction. We draw strongly on readers' contributions, resulting in the liveliest letters pages and the best reader tips. Buying one of our magazines is like joining a nationwide user group.

Better value for money. More pages, better quality: magazines you can trust.

future
PUBLISHING

Home of Britain's finest computer magazines.

New Computer Express
Amstrad Action • 8000 Plus • PC Plus
Amiga Format • ST Format
Your Sinclair • Commodore Format
Sega Power • Amiga Power
Amiga Shopper

CITIZEN

PRINTERS

The Citizen 124D Printer

FREE DELIVERY

Next Day - Anywhere in the UK mainland

FREE STARTER KIT

Worth £29.95 - With every Citizen printer from Silica

FREE COLOUR KIT

Worth £39.95 - With Swift 9 and Swift 24 printers.

2 YEAR WARRANTY

Silica offers a 2 year warranty (including the printer head) with every Citizen printer purchased from Silica

WINDOWS 3.0

Free Windows 3.0 driver - In the Silica Starter Kit

FREE HELPLINE

Technical support helpline open during office hours

MADE IN THE UK

Citizen printers are manufactured to high standards

Silica presents some great offers on the award winning range of high quality dot matrix printers from Citizen. Each Citizen printer is built in the UK to exacting standards, ensuring superb reliability and a very high quality of output. Our confidence in the quality of Citizen printers is such that we are pleased to offer a unique two year guarantee with every printer. Plus, if you purchase your Citizen printer from us, we will give you a Silica Printer Starter Kit (worth £29.95), **FREE OF CHARGE!**

144 CPS DRAFT 9 PIN**CITIZEN 120D+**

The Citizen 120D+ is one of the UK's best selling printers. It has a stylish appearance and excellent features and performance for such an inexpensive printer. The 120D+ is available with either a serial or parallel interface and is an ideal first printer

- 9-pin Printhead
- Print Speed 144cps Draft
- 30cps NLQ
- Epson & IBM Graphics Emulation
- Pull Tractor & Bottom Feed
- Superior Graphics - 240x216dpi
- FREE Starter Kit

RRP £233.83
STARTER KIT £29.95

TOTAL RRP: £263.78
SAVING: £112.20

SILICA PRICE: £151.58

£129
+VAT = £151.58

144 CPS DRAFT 24 PIN**CITIZEN 124D**

The award winning Citizen 124D brings high quality 24-pin dot matrix printing within every computer users reach. It is the ideal choice where high quality printing is required at a budget price.

- 24-pin Impact Printer
- Print Speed 144cps Draft
- 2 LQ Fonts (48cps)
- 8K Buffer
- Epson, IBM & NEC P6+ Emulation
- Advanced Paper Parking
- Superior Graphics - 360x360dpi
- FREE Starter Kit

RRP £292.58
STARTER KIT £29.95

TOTAL RRP: £322.53
SAVING: £112.20

SILICA PRICE: £210.33

£179
+VAT = £210.33

192 CPS DRAFT 9 PIN**SWIFT 9 - COLOUR!**

The Citizen Swift 9 is perfect for those who require high quality dot matrix black or colour printing at a budget price. The print quality of Swift 9 rivals that of other manufacturer's 24-pin models.

- 9-pin Impact Printer
- Print Speed 192cps Draft
- 3 NLQ Fonts (48cps)
- 8K Buffer
- Epson & IBM Graphics Emulation
- Advanced Paper Parking
- FREE Starter Kit
- FREE Colour Kit

RRP £290.83
STARTER KIT £29.95

TOTAL RRP: £320.78
SAVING: £133.35

SILICA PRICE: £187.43

£189
+VAT = £222.08

192 CPS DRAFT 24 PIN**SWIFT 24 - COLOUR!**

The Citizen Swift 24 is one of Europe's best selling printers and has won awards including Printer Of The Year 1990. Its rapid print speed, quality and black or colour options, make it a natural choice.

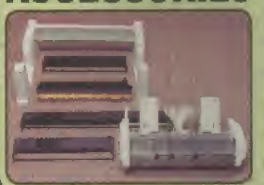
- 24-pin Impact Printer
- Print Speed 192cps Draft
- 4 NLQ Fonts (84cps)
- 8K Buffer
- Epson, IBM & NEC P6+ Emulation
- Advanced Paper Parking
- FREE Starter Kit
- FREE Colour Kit

RRP £428.88
STARTER KIT £29.95

TOTAL RRP: £458.83
SAVING: £139.15

SILICA PRICE: £319.68

£259
+VAT = £319.68

PRINTER ACCESSORIES**SHEET FEEDERS**

PRA 1200	1200	£71.38
PRA 1215	124D/Swift 9/24	£88.70
PRA 1228	124D/Swift 9/24	£42.00

SERIAL INTERFACES

PRA 1189	120D+	£36.45
PRA 1259	Swift 9/124D	£32.25
PRA 1709	Swift 24	£26.38

PRINTER STAND

PRA 1242	124D/Swift 9/24	£24.03
----------	-----------------	--------

ORIGINAL RIBBONS

RIB 3520	120D/Swift 9 Black	£4.11
RIB 3524	124D/Swift 24 Black	£4.70
RIB 3636	Swift 9/24 Colour	£15.83

COLOUR KITS

PRA 1236	Swift 9/24	£39.95
----------	------------	--------

All prices include VAT and Free delivery.

FREE! STARTER KIT

Every Citizen printer from Silica, comes complete with the Silica Printer Starter Kit, including everything you need to get up and running with your new printer immediately. **FREE OF CHARGE!**

- 3 1/2" Dual Format Disk with Amiga & ST Printer Drivers
- 3 1/2" Disk with Drivers for Microsoft Windows 3
- 2 Metre Parallel Printer Cable
- 200 Sheets of High Quality Continuous Paper
- 200 Continuous Address Labels on Tractor Feed
- 5 Continuous Envelopes on Tractor Feed

If you already own a printer, and would like a Silica Printer Starter Kit, you may order one (ref. KIT 5000) for the special Silica price of £24.95 - £5 off RRP!

NORMAL RRP
£29.95

**SILICA SYSTEMS OFFERS YOU**

- **FREE OVERNIGHT COURIER DELIVERY:** On all hardware orders shipped in the UK.
- **TECHNICAL SUPPORT HELPLINE:** Team of PC technical experts at your service.
- **PRICE MATCH:** We normally match competitors on a "Same product - Same price" basis.
- **ESTABLISHED 12 YEARS:** Proven track record in professional computer sales.
- **13M TURNOVER (with 60 staff):** Solid and reliable with maintained growth.
- **BUSINESS/EDUCATION/GOVERNMENT:** Volume discounts available for large orders.
- **SHOWROOMS:** Demonstration and training facilities at our London & Sidcup branches.
- **THE FULL STOCK RANGE:** All of your PC requirements from one supplier.
- **FREE CATALOGUES:** Will be mailed to you with offers and software/peripheral details.
- **PAYMENT:** By cash, cheque and all major credit cards.

Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or some technical help and advice. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is one of the UK's leading independent computer dealers and provides a quality service to users at home, in education and in business throughout the nation. Silica has been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest Free literature on the Citizen printer range and begin to experience the "Silica Systems Service".

SILICA SYSTEMS

MAIL ORDER:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	Tel: 081-309 1111
Order Lines Open:	Mon-Sat 9:00am-6:00pm	No Late Night Opening
LONDON SHOP:	52 Tottenham Court Road, London, W1P 0BA	Tel: 071-580 4000
Opening Hours:	Mon-Sat 9:30am-6:00pm	No Late Night Opening
LONDON SHOP:	Selldidges (1st Floor), Oxford Street, London, W1A 1AB	Tel: 071-629 1234
Opening Hours:	Mon-Sat 9:30am-6:00pm	Late Nights: Thursday until 8pm
SIDCUP SHOP:	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX	Tel: 081-302 8611
Opening Hours:	Mon-Sat 9:00am-5:30pm	Late Night: Friday until 7pm

To: Silica Systems, Dept NCE 0691 - 55, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND CITIZEN PRINTER INFORMATION

Mr/Ms/Ms. Initials: Surname:

Address:

Postcode:

Tei (Home): Tei (Work):

Company Name (if applicable):

Which computer(s), if any, do you own?

£&Q - Advertised prices and specifications may change. Please return the coupon for the latest information.

The New 1 Meg Amiga From Digicom

Following The Huge Success Of Our F-19 Digistar Offer, We At Digicom Are Proud To Present The Meanest Pack Available For The Amiga A500. This Unbeatable Deal Now Includes Commodore's Screenegms Pack PLUS the A501 RAM/Clock Upgrade Plus Our Very Own Exclusive New Arcade Smash Hits Pack And The Chart Topping 1 Megabyte Version Of Kick Off 2!

Includes: Amiga A500 Computer 512K Keyboard PLUS A501 512K RAM/Clock Expansion Fitted To Give 1 Meg Memory Total
 ● Built-in 1 megabyte DS/DD 3.5" Disk Drive ● Multi-Tasking Operating System ● Latest Kickstart And Workbench 1.3 ● Superb 4096 Colour Graphics ● Speech Synthesis ● 4 Channel Digital Stereo Sound ● Notepad Word Processor ● Commodore Mouse Plus 3 Owners Manuals ● Amiga Basic Program Language ● T.V Modulator And All Connecting Leads And Cables



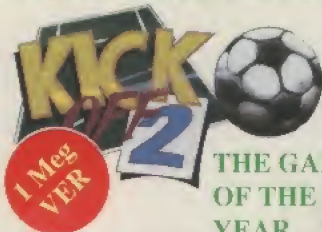
Plus This Great Software : Shadow Of The Beast 2 ● Days Of Thunder ● Back To The Future 2 ● NightBreed ● Deluxe Paint 2

Plus Exclusively to Digicom

Bring The Atmosphere Of The Arcade To Your Home With The Arcade Smash Hits Pack From Sega, Incorporating Five Of The Most Exciting Games Around !

Thunder Blade Alien Syndrome Out Run Shinobi After Burner

Plus : A High Quality Microswitched Joystick, Amiga Tailored Dustcover, 10 Blank Disks And Disk Storage Box, Mouse Mat And.....



Notice : The Memory Upgrade Supplied With This Offer Is The Official Commodore A501 Ram Expansion Worth £99.00 ANY Alternative Expansion Unit Will Invalidate Your Warranty

Complete Package Price Only

£399.00

1 Meg Amiga Screenegms Pack (As detailed in the above offer) Plus The Superb Philips CM8833Mk2 Multipurpose Colour/Stereo Monitor

Free Amiga/8833 Lead And Monitor Dust Cover

£628.00

1 Meg Amiga Screenegms Pack (As detailed in the above offer) PLUS Philips CM8833Mk2 (Colour/Stereo Monitor)

Star LC200 9 Pin (Colour Printer)

Free Printer Dust Cover & Lead

£828.00

HOW TO ORDER

By Phone:

Call Our Credit Card Order Line And Quote Your Credit Card Details To Our Helpful Sales Staff. We Accept ACCESS, EUROCARD, VISA, MASTERCARD, AMEX, BARCLAYS CONNECT, SWITCH, and LOMBARD CREDITCHARGE.

By Mail:

Simply Write Down Your Order And Post It To Us With A Personal Cheque, Postal Order, Bankers Draft Or Building Society Cheque Made Payable To "Digicom Computer Services Ltd".

(Personal Cheques Require Time To Clear Before Despatch)

All Prices Include VAT And FREE Delivery

Next Day Courier Delivery At £5.00 Extra

Visit Our Showroom Open Mon-Sat 9.00am-5.30pm

DIGICOM

36-37 Wharfside, Fenny Stratford, Watling Street
Milton Keynes MK2 2AZ

Wharfside Is Opposite The Bridge Pub On The A5 Watling Street

Prices And Specifications Are Subject To Change Without Notice. E&OE

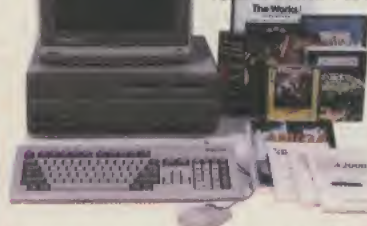
The New Amiga 1500 Is Here !

The Ultimate Personal Home Computer Designed To Cover Every Computing Requirement, From Business To Leisure And From Design To Education

Includes : 1500 CPU with One Megabyte of Memory :

Separate Keyboard : Additional Disk Drive
Optional IBM Compatability

9 Expansion Slots Plus This Great Software
THE WORKS PLATINUM EDITION



DELUXE PAINT 3
THEIR FINEST HOUR
BATTLE CHESS
SIMCITY+
TERRAIN EDITION
POPULOUS SPECIAL

1500 System With Commodore 0984511
Colour Monitor And 52MB Autoboot
Hard Drive Only **£1249.00**

1500 System Only
£679.00

1500 System With
Philips 8833Mk11
£909.00

Phone Our 24 Hour Hot Line
(0908) 378008
8 Lines Open
Fax (0908) 379700
All Major Credit Cards Accepted

★ Digicom Offers You ★

- ★ Free Catalogue (With All Orders)
- ★ Regular Newsletters And Special Offers
- ★ 12 Month Guarantee On All Product
- ★ 30 day Replacement Of Faulty Product
- ★ Technical Helpline
- ★ All Product Tested Before Despatch
- ★ Price Or Product Match